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CUTANEOUS ANTHRAX

Report of Twenty-Five Cases

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This report presents observations on 25 consecutive cases of cutaneous anthrax. Bacillus anthracis was recovered from the blood of 3 of the patients. All were treated with penicillin, and 3 were treated with sulfadiazine in addition to penicillin. All recovered uneventfully. In comparing this series of cases with others from civilian practice it may be significant that these workers were under close medical surveillance at all times, and general treatment was initiated while the lesions were in relatively early stages. Significant data are summarized in table 2.

LOCATION OF LESIONS

As in cases previously reported from hide and wool industries, lesions were located for the most part on exposed areas of the body. Nearly all patients had solitary lesions, but patient 5 had multiple lesions on the wrist, patient 10 had one lesion on the wrist and another on the neck, and patient 21 had a lesion on each of two fingers of the same hand. Locations of lesions are summarized in table 1.

PRECEDING TRAUMA AS A FACTOR IN INFECTION

In 5 patients infection occurred at sites of known preceding trauma. One of these lesions appeared at the site of a cigaret burn on the face, two developed at sites of abrasions on the fingers and one occurred in a "hangnail," where the epithelium at the base of the fingernail had been cracked. Among the remaining 20 patients several believed that they had had "ordinary pimples" at sites where specific anthrax lesions later appeared. It is impossible to determine whether or not these "pimples" represented early stages of the anthrax lesion itself.

EARLY SYMPTOMS

Only 1 patient complained of malaise before he was aware of the cutaneous lesion. Two others suffered from some malaise before the nature of the lesions was suspected. In all other cases in the series, investigation was prompted by local signs. The earliest symptom reported was pruritus, which was sometimes noted before any evidence of a local lesion was visible. The earliest visible sign, in general, was a small red macule. In most of the cases these macules had developed into small vesicles or ulcers at the time of diagnosis. Localized edema surrounding the lesion was seen in 13 patients but was absent in 12 at the time of reporting. As to duration of infection prior to diagnosis, 13 had been aware of skin lesions for forty-eight hours or less, while 12 had recognized lesions for longer periods. Among the latter group were several who believed they had had "pimples" for several days before a change in character of the lesions became apparent.

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EVOLUTION OF CUTANEOUS LESIONS

Treatment was initiated as soon as a diagnosis was made. In spite of treatment the lesion in every case passed through a typical cycle of gross pathologic changes which may be described briefly as follows: In the absence of preceding trauma the first evidence of infection is a red macule, usually attended with some pruritus. The macule soon becomes elevated to form a firm, red papule. Within a few hours a central vesicle appears, filled with clear or opalescent fluid in which organisms can be demonstrated by smears and cultures. The vesicle may rupture early, leaving a small ulcer, or may enlarge by direct extension or by development of a ring of satellite vesicles. In cases in which a burn, abrasion or cut is the point of infection, similar vesicles appear about the periphery of the original lesion. In any case the vesicles are pink for the first forty-eight to seventy-two hours but then become hemorrhagic in character. A zone of deep red indurated tissue 2 to 3 mm. wide surrounds the vesicles and in turn is surrounded by a zone of erythema, 5 to 20 mm. wide, fading toward the periphery. Edema about the lesion may be present or absent. A striking feature of the infection is the absence of pain in the lesion itself, which is in sharp contrast to abscesses caused by the common pyogenic organisms. Enlarged regional lymph nodes, however, may be acutely tender during the development of the anthrax lesion. Within two to six days after onset, the vesicles rupture and begin to dry, and any edema begins to recede. Once the process begins to subside, any edema disappears rapidly and tenderness of the regional glands subsides within a few days. In drying, the hemorrhagic vesicles form a tough black crust or eschar, which is characteristic of this infection. The eschar can usually be removed easily in ten to fourteen days after onset but is sometimes firmly embedded and may persist for long periods. In case 3, the eschar remained in place for sixty-seven days. Separation of the eschar leaves a defect which is gradually filled with granulation tissue. The accompanying illustrations depict the several stages of typical lesions.

SYSTEMIC REACTIONS

Headache, malaise and joint pains occurred in varying degree in 20 patients. Five had no systemic reactions whatever. The severity of subjective complaints was usually proportional to the extent of edema surrounding the lesion, although 2 patients showed severe general reactions while local edema was slight. At the time of diagnosis, temperatures were not especially elevated. In 19 patients the admission temperatures were at 99 F. or below, and none exceeded 100 F.

TABLE 1.—*Location of Lesions*

Hands and wrists	8*
Face and neck	9*
Arms	5
Lower extremities	3
Trunk	1

* One patient had lesions on both neck and wrist.

During the subsequent course of the infection, temperatures were commonly elevated for two to six days. In 9 of the patients these elevations did not exceed 100 F. at any time; 16, however, showed significant temperature elevations, reaching maximum levels from 101 to 104.4 F. between the third and sixth days of the infection.

TREATMENT

Historical aspects of the treatment of anthrax have been reviewed in detail by Heilman and Herrell [1] and need be mentioned only briefly. Early treatment was by cautery or excision and was attended with a fatality rate of 30 to 60 per cent. After introduction of Sclavo's antianthrax serum, radical local treatment was gradually abandoned, with improvement in recovery rates. Lucchesi and Gildersleeve [2] reported 67 cases treated with serum, neoarsphenamine or both, without a single death. Gold [3] reported 60 cases of cutaneous anthrax treated with serum, neoarsphenamine and various sulfonamides, with only one death. Gold concluded that sulfonamides were preferable to neoarsphenamine, serum being reserved for those cases which did not respond to sulfonamide therapy.

Treatment of anthrax with penicillin was suggested in 1941, when Abraham and his associates [4] reported the in vitro sensitivity of B. anthracis to this antibiotic. In vivo trials in animals were first reported by Heilman and Herrell,[1] who found that penicillin was effective in reducing mortality among mice injected with lethal doses of B. anthracis even when treatment was delayed as long as sixteen hours after infection. The first report of the use of penicillin in the treatment of human anthrax was that of Murphy, LaBocetta and Lockwood,[5] who treated 3 cases of cutaneous anthrax with 475,000 units, 325,000 units and 100,000 units, respectively, and noted striking improvement in twenty-four hours or less.

TABLE 2.—*Summary of Some Observations on Twenty-Five Cases of Cutaneous Anthrax*

Case Number	Location of Lesion	Duration Prior to Treatment	Initial Blood Culture	Local Edema	Systemic Reaction	Maximum Size of Lesion	Duration of Treatment Before Improvement	Total Dose Penicillin, Units	Duration of Hospitalization, Days
1	Finger	48 hrs.	Negative	Moderate	Slight	5 × 7 mm.	3 days	1,785,000	26
2	Neck	6 hrs.	Negative	Severe	Moderate	15 × 25 mm.	2 days	2,920,000	29
3	Leg	24 hrs.	Negative	Severe	Severe	15 × 30 mm.	3 days	3,060,000	25
4	Neck	48 hrs.	Negative	Moderate	Slight	10 × 20 mm.	2 days	1,080,000	12
5	Wrist	6 days?	Positive	Moderate	Severe	20 × 35 mm.	3 days	1,710,000	25
6	Forearm	24 hrs.	Negative	Slight	None	5 × 7 mm.	3 days	2,110,000	14
7	Foot	48 hrs.	Negative	Moderate	Moderate	10 × 15 mm.	4 days	2,940,000	45
8	Finger	48 hrs.	Negative	Slight	Moderate	20 × 30 mm.	4 days	1,200,000	39
9	Neck	24 hrs.	Negative	Severe	Severe	12 × 15 mm.	3 days	4,600,000	34
10	Wrist-neck	24 hrs.	Positive	Slight	Severe	8 × 9 mm.	3 days	2,710,000	22
11	Neck	8 hrs.	Positive	Moderate	Severe	12 × 13 mm.	6 days	1,800,000	21
12	Elbow	48 hrs.	Negative	Slight	None	6 × 8 mm.	3 days	2,160,000	15
13	Flank	6 days	Negative	Slight	Slight	4 × 8 mm.	2 days	1,320,000	10
14	Upper arm	24 hrs.	Negative	Slight	Slight	4 × 6 mm.	4 days	2,390,000	13
15	Knee	24 hrs.	Negative	Moderate	Severe	23 × 33 mm.	4 days	1,350,000	15
16	Upper arm	24 hrs.	Negative	Severe	Severe	10 × 15 mm.	4 days	1,830,000	16
17	Forearm	72 hrs.	Negative	Slight	Slight	5 × 7 mm.	3 days	1,320,000	7
18	Finger	5 days	Negative	Slight	Slight	10 × 10 mm.	1 day	1,110,000	7
19	Neck	4 days	Negative	Slight	Slight	10 × 10 mm.	2 days	1,380,000	12
20	Finger	24 hrs.	Negative	Slight	None	6 × 6 mm.	2 days	1,140,000	7
21	Fingers	24 hrs.	Negative	Slight	Slight	4 × 4 mm.	2 days	1,140,000	4
22	Face	72 hrs.	Negative	Moderate	Slight	14 × 14 mm.	3 days	1,980,000	14
23	Wrist	72 hrs.	Negative	Slight	Severe	10 × 20 mm.	5 days	2,940,000	14
24	Face	72 hrs.	Negative	Slight	None	14 × 14 mm.	3 days	2,070,000	9
25	Face	72 hrs.	Negative	None	None	8 × 8 mm.	3 days	1,150,000	9

All patients in the present series were treated with penicillin, in total dosages ranging from approximately 1,000,000 units to over 4,000,000 units. Since the first 3 cases occurred at a time when, to our knowledge, penicillin had not had clinical trial in this infection, these 3 individuals also received sulfadiazine orally in doses sufficient to maintain blood levels above 8 mg. per hundred cubic centimeters for from four to eighteen days. In the remaining patients penicillin was used alone. In general the plan of therapy was to give 60,000 units intramuscularly in each of five doses, followed by 30,000 units every three hours by the same route. Deviations from the standard program occurred in several cases when larger doses were given and in 2 cases when penicillin was administered by continuous intramuscular infusion for brief periods. In most cases

1. Heilman, F. R., and Herrell, W. E.: Penicillin in Experimental Infections, Proc. Staff Meet., Mayo Clin. **19:** 492 (Oct.) 1944.
2. Lucchesi, P. E., and Gildersleeve, N.: Treatment of Anthrax, J. A. M. A. **116:** 1506 (April 5) 1941.
3. Gold, H.: Anthrax: A Review of 60 Cases, Arch. Int. Med. **70:** 785 (Nov.) 1942.
4. Abraham, E. P.; Chain, E.; Fletcher, C. M.; Gardner, A. D.; Heatley, N. G.; Jennings, M. A., and Florey, H. W.: Further Observations on Penicillin, Lancet **2:** 177 (Aug. 16) 1941.
5. Murphy, F. D.; LaBocetta, A. C., and Lockwood, J. S.: Treatment of Human Anthrax with Penicillin, J. A. M. A. **126:** 948 (Dec. 9) 1944.

dressings applied to the lesions were kept moist with penicillin in saline solution (1,000 units per cubic centimeter) for seven days. In general, intramuscular penicillin therapy was continued until the following criteria were met: (1) Edema had begun to recede, (2) cultures from lesions were negative for B. anthracis, (3) systemic symptoms had subsided and (4) lesions were drying. Blood penicillin levels were not determined. No other treatment was given other than acetylsalicylic acid for symptomatic relief and general supportive measures. All patients were kept at bed rest during the acute phase of their infections and, when possible, affected parts were immobilized.

LABORATORY STUDIES

Presumptive diagnosis was made in each case by the finding of organisms morphologically typical of B. anthracis in gram stained smears of lesions at the time of admission to the hospital. Cultures from the lesions were taken at the same time, for confirmation. Treatment with penicillin was begun immediately when

Fig. 1 (case 11).—Typical macular stage, first day. A minute vesicle in the center of this macule contained a serous fluid in which B. anthracis was found.

a presumptive diagnosis was made. Thereafter, smears and cultures were taken at twenty-four hour intervals for at least seven days. Data on the persistence of organisms are summarized in table 3.

It is notable that in only 3 cases were viable organisms recovered from the lesions for more than twenty-four hours after treatment had been initiated, and in only 2 for more than forty-eight hours. Of these 2, 1 had not received local applications of penicillin; in the other, a penicillin resistant strain of Staphylococcus aureus was cultivated from the lesion, along with B. anthracis. In 5 cases organisms persisted longer in smears than in cultures from the lesions, and among these cases it was commonly reported that the organisms seen were morphologically atypical, showing swelling and fragmentation.

In 4 of the cases, smears and cultures were also made at hourly intervals for the first six hours after treatment was started. In all 4, organisms were seen in smears for the entire six hours. Cultures from 2 of the cases were negative two hours after initiation of treatment. In the other 2 cultures were positive at the end of six hours but negative twenty-four hours after initiation of treatment.

Blood cultures (10 cc. specimens in 100 cc. of beef extract broth) were taken before treatment and at twenty-four hour intervals for seven days. In the last

Fig. 2 (case 11).—Typical vesicular stage, sixth day. This lesion progressed with unusual slowness. At the time illustrated here a ring of pink vesicles surrounded the central hemorrhagic area.

TABLE 3.—*Persistence of Organisms*

Period After Initiation of Treatment	Cases Showing Persistence of Organisms	
	In Smears	In Cultures
Less than 24 hours	17	22
24 to 48 hours	2	1
48 to 72 hours	1	0
Over 72 hours	5	2

Fig. 3 (case 3).—Typical vesicular stage, fourth day. This lesion had reached its maximum size at the time illustrated here and began to regress shortly thereafter. Vesicles were filled with hemorrhagic fluid.

10 cases of the series, penicillinase was added to the medium. In cases 5, 10 and 11, blood cultures prior to treatment yielded growth of B. anthracis. In no case was the organism recovered from blood specimens taken after twenty-four hours or more of treatment. It must be pointed out that the 3 cases showing bacteremia prior to treatment occurred before penicillinase was

available; therefore sterility of subsequent cultures may not have been valid evidence of clearing of organisms from the blood.

Leukocyte counts on admission were normal in 22 of the 25 cases; 3 had counts between 10,000 and 17,500 cells per cubic millimeter. During the course of the illness only 10 patients showed significant elevation of leukocyte counts; in these, maximum counts between 10,000 and 23,000 cells per cubic millimeter occurred, between twenty-four and seventy-two hours after treatment was begun (third to fourth day of the disease). Differential counts in each case showed a definite increase in proportions of polymorphonuclear cells.

COMMENT

It is difficult to evaluate a therapeutic agent on the basis of a series of 25 patients without controls who are comparable as to age, general physical condition, location of lesions and stage of lesions at the time of treatment. However, certain observations concerning these patients deserve emphasis. All recovered uneventfully in spite of the fact that B. anthracis was isolated from the blood stream of 3 of these patients prior to treatment. Although it is possible that a transitory bacteremia may be more common in anthrax than has been recognized, nevertheless in the past this has been considered a grave prognostic sign. Under treatment, 14 of the patients showed only slight systemic reaction or none at all. Furthermore, the disappearance of viable anthrax bacilli from the lesions in twenty-four hours or less in 22 of these cases is considered significant.

It was apparent in all of these patients that the anthrax lesion continued to advance through a well defined and typical cycle, in spite of treatment and in spite of the absence of viable organisms. This continued progression is difficult to explain unless it is hypothesized that factors responsible for vesiculation, capillary damage, edema and generalized reactions had been produced by the organisms before treatment was begun and exerted a continued effect even after viable organisms were no longer present. This hypothesis is supported by experimental work, to be reported in the near future by other workers, on the isolation of a "tissue damaging factor" from cultures of B. anthracis. This factor has been found to be responsible for the spreading, hemorrhage and necrosis in anthrax lesions in animals.

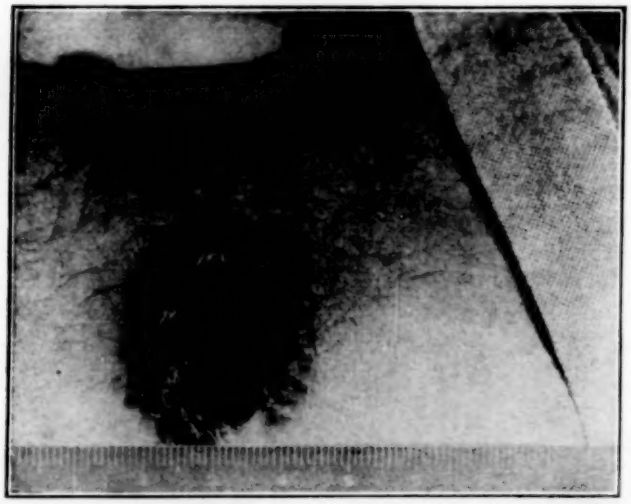

Fig. 4 (case 15).—Typical eschar formation, eighth day. At the time illustrated here all vesicles had ruptured and dried, forming a typical eschar.

The influence of secondary bacterial invaders on the course of the anthrax lesion deserves further investigation, since B. anthracis was found to survive for prolonged periods in one lesion in this series, from which a penicillin resistant strain of Staphylococcus aureus was also isolated.

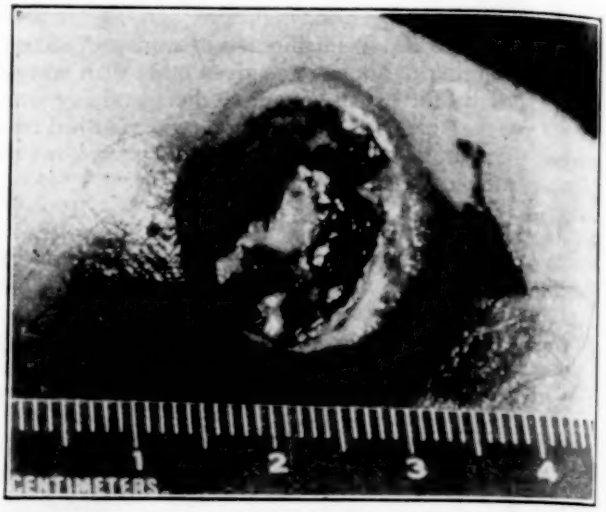

Fig. 5 (case 15).—Typical defect left by separation of eschar, twenty-eighth day. Separation of eschar left a punched out ulcer, which was slowly filled with granulation tissue.

SUMMARY

Twenty-five patients with cutaneous anthrax were studied. B. anthracis was isolated from blood cultures of 3 of these patients prior to treatment. All patients were treated with penicillin in total dosages from approximately 1,000,000 units to over 4,000,000 units. Three patients also received sulfadiazine. In no instance was B. anthracis isolated from the blood after twenty-four hours or more of treatment. Although all lesions showed continued progression after treatment had been begun, in only 3 cases were viable B. anthracis organisms recovered from the lesions after twenty-four hours of treatment. All patients recovered uneventfully. It is believed, therefore, that penicillin may have modified the course of these infections and that this therapeutic agent deserves further clinical trial in the treatment of cutaneous anthrax.

Freind's History of Physick Written in Prison.—A recent book of extracts from writings by authors while serving time in prison brings to mind that Dr. John Freind (1675-1728) began to write his history of medicine during his imprisonment in the Tower in London in 1722-1723. Freind was supposed to have had a hand in a plot to restore the Stuart family. During his imprisonment Freind's practice was cared for by the celebrated Richard Mead, through whose efforts he was set free. It is said (Macmichael, William: The Gold Headed Cane: A New Edition, with an Introduction and Annotations by George C. Peachey, London, Henry Kimpton, 1923, pp. 54-59) that Mead refused to prescribe for Sir Robert Walpole, the Minister, unless Freind was released. It is also said that at a gathering in Mead's house to congratulate Freind on his liberation Mead presented him privately with five thousand guineas "which he had received from Freind's patients, whom he had visited during his imprisonment" for three months. This statement has been characterized as "clearly incorrect," but there can be no question about Mead's generosity and helpfulness. The title of Freind's history, which is dedicated to Mead, is History of Physick from the Time of Galen to the Beginning of the Sixteenth Century (London, 1725-1726). It is regarded as probably the best English summary of that period.

STUDIES IN GLYCOSURIA AND DIABETES MELLITUS IN SELECTEES

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Glycosuria [1] was found in 0.8 per cent of 45,650 selectees at the Boston Induction Station, and it was considered that 57 per cent of these persons with glycosuria were diabetic. This study suggested that the incidence of glycosuria and diabetes is much greater than previously thought. It was concluded that there must be cases of unrecognized diabetes that could be diagnosed if routine urine tests were made on the general population.

In general practice, if glycosuria is discovered on routine examination of a patient in the doctor's office or in the hospital, it has been all too often the custom to order a test of fasting blood sugar and urine sugar. If the results are normal it is assumed usually that the diagnosis of diabetes is eliminated. Such a procedure, no doubt, has been the cause of overlooking many mild cases of diabetes.

Spellberg and Leff [2] reported recently on the incidence of diabetes mellitus and glycosuria in 32,003 inductees at the New Orleans Induction Station and found only 37 cases of glycosuria, of which only 9 appeared to be true diabetes. There is a great difference between these figures and those presented by Blotner and Hyde.[1] Such a divergence in results may be due to some major difference in the selection of selectees or in the methods used in the detection of glycosuria. It appeared important to study another large series of cases at the Boston Induction Station and compare these findings with those previously noted.

This paper presents a study of glycosuria in 69,088 consecutive selectees aged 18 to 37 years, about 75 per cent being below 30, who appeared for final examination at the Boston Induction Center. These selectees formed a different and subsequent group from that previously reported.[1]

METHODS

The subjects who appeared for final examination at this station formed an excellent cross section of men of military age. They did not have obvious gross disqualifying defects evident on inspection by local board examiners and were not confined to institutions. It was not the custom of the local boards in this district to screen out diabetes before sending them to the induction station. If there was a diabetic subject who was not sent to the induction station it was so rare that it would not affect the data here.[3] Comparatively few persons with glycosuria appeared more than once at the station, and each person was regarded as presenting 1 case of glycosuria regardless of the number of times examined.

All men had thorough physical and mental examinations, chest x-rays and routine urinalyses and were checked for various infections. Infection did not appear to be significant in the incidence of glycosuria. In the laboratory the selectees voided urine into clean bottles in the presence of the technician.

The routine examination for sugar in the urine was made by the "galatest." The active ingredients of the powder used in this test are sodium hydroxide and bismuth oxychloride. A drop of urine is deposited on a little "galatest" powder placed on paper and covering an area about one-fourth inch in diameter. If sugar is present the powder will turn gray or black instantly, depending on the amount of sugar present.

When sugar was detected by the "galatest," the same urine specimen was tested again with Benedict's qualitative solution. Four drops of urine were added to 2.5 cc. of Benedict's solution and kept for five minutes in a boiling water bath. The qualitative amounts of sugar in the urine were indicated according to the color changes, 1 plus for green with heavy precipitate, 2 plus for yellow, 3 plus for orange and 4 plus for brick red. Hence there was a double check on the glycosuria. In this study the final results of the qualitative amounts of sugar in the urine are given according to Benedict's method and are recorded as 1 plus to 4 plus.

When sugar was found, the urine was tested again twice on the same day, usually before and after lunch. In a group of 479 cases in which there was no verified history of diabetes the men had sugar tolerance tests made on a subsequent day during certain phases of this investigation. A standard dose of 100 Gm. of dextrose was employed and was ingested after the subject had fasted overnight. The concentration of sugar in the blood and urine was determined in specimens taken during fasting and at intervals of one-half, one and two hours after the ingestion of the dextrose. The determination of the blood sugar was made on 2 cc. samples of venous blood according to the method of Folin and Wu.[4] As far as could be determined, the diets did not appear to be a factor in producing abnormal sugar tolerance curves. This was also true of infection.

The incidence of glycosuria and diabetes, the age, nationality and family history of diabetes, and the past history of glycosuria and diabetes were noted. The sugar tolerance tests made in the 479 selectees were analyzed.

INCIDENCE OF GLYCOSURIA

Glycosuria varying in degree from 1 plus to 4 plus was found in 1,383, or 2.0 per cent of the 69,088 selectees examined. The qualitative amounts of sugar in the urine in the 1,383 cases were sugar 1 plus in 651 cases, 2 plus in 229 cases, 3 plus in 147 cases and 4 plus in 356 cases.

In 363 cases with sugar 1 plus the urine became sugar free with equal frequency in either the second or the third specimen tested. In another 104 cases the urine became sugar free in a fourth specimen tested. In the remaining cases the glycosuria persisted with slight variations. No doubt some were instances of emotional glycosuria. Folin and his associates [5] found small traces of sugar in the urine of a group of medical and female college students immediately after scholastic examinations and attributed this to emotional strain.

Of the persons with sugar 1 plus in the urine, 43 were known to have diabetes and 94 others knew they had glycosuria previously. Of the persons with 2 plus and 3 plus sugar, 15 were known to have diabetes and

Capt. Maurice S. Rothman cooperated in this study.

1. Blotner, H., and Hyde, R. W.: Studies in Diabetes Mellitus and Transient Glycosuria in Selectees and Volunteers, New England J. Med. **229**: 885, 1943.
2. Spellberg, M. A., and Leff, W. A.: Incidence of Diabetes and Glycosuria in Selectees, J. A. M. A. **129**: 246 (Sept. 22) 1945.
3. Washburn, V. D., Colonel, M. C., state medical officer of Massachusetts Selective Service System: Personal communication to the author.
4. Folin, O., and Wu, H.: System of Blood Analysis: A Simplified and Improved Method for Determination of Sugar, J. Biol. Chem. **41**: 367, 1920.
5. Folin, O.; Denis, W., and Smillie, W. G.: Some Observations on Emotional Glycosuria in Man, J. Biol. Chem. **17**: 519, 1914.

74 others knew that they had glycosuria previously. Of the persons with 4 plus sugar, 52 were known to have diabetes and 54 others knew they had glycosuria previously.

The incidence of glycosuria here is similar to that found in the National Youth Administration study [6] in which glycosuria was found in 2.6 per cent of 147,813 youths aged 16 to 24 years. Of this group 2.2 per cent had a slight degree of glycosuria and 0.4 per cent had a medium or advanced degree of sugar in the urine. There were 178 known to have diabetes. No variation with age and sex was noted. Negro youths had glycosuria more frequently than white youths, the incidence being 3.5 per cent in the Negroes compared to 2.4 per cent of the white youths.

The report from the Boston Induction Station [1] stimulated Marquis [7] to observe the incidence of glycosuria and diabetes in selectees at the Induction Station in Seattle, and his findings were similar to those noted in Boston.

DIAGNOSIS WITH SUGAR TOLERANCE TESTS

A study was made of the sugar tolerance tests performed in 479 selectees with glycosuria. In most instances the tests were made in cases presenting sugar 1 plus in the urine which did or did not disappear in the subsequent specimens.

The criteria for interpreting the normal sugar tolerance are rather difficult to fix, because of the variable blood sugar curves which have been reported for so-called nondiabetic persons. A paper on the criteria for determining the normal sugar tolerance, using 100 Gm. of glucose, was written by Gray,[8] who studied 300 apparently healthy persons. His data showed the average normal fasting blood sugar to be 0.09 per cent and the average postprandial values to be 0.14 per cent in one-half hour, 0.12 per cent in one hour, 0.11 per cent in two hours and 0.09 per cent in three hours. Others have reported higher values for normal sugar tolerance curves even with the maximum peak of about 0.18 per cent after glucose ingestion. Joslin [9] believes that the normal values usually do not exceel 0.14 per cent, although the diagnosis of diabetes would not be justifiable unless a value of 0.17 per cent was attained. Grafe [10] considers values higher than 0.16 per cent as pointing to incipient cases of diabetes.

In this study sugar tolerance tests were called normal if the fasting blood sugar level was below 130 mg. per hundred cubic centimeters and if the peak of the curve fell below 165 mg. per hundred cubic centimeters in one-half or one hour after the ingestion of the glucose and no sugar was found in the urine at this level. Potential diabetes was diagnosed when the subject had a blood sugar concentration of approximately 165 mg. per hundred cubic centimeters in one-half or one hour and some or all of the urine specimens contained sugar after the ingestion of the glucose. Diabetes was diagnosed when the blood sugar concentration exceeded a level of 170 mg. in one-half or one hour and some or all of the urine specimens contained sugar after the ingestion of the glucose, even though the fasting blood sugar was normal and the fasting urine was sugar free. No doubt some of these are borderline cases. Nevertheless they ought to be followed up as diabetic. Christian [11] feels that the detection of a little sugar in the urine may have the great advantage of frightening the patient into a more rational mode of life.

I think it is best and safer to consider persons with peaks in blood sugar curves of 165 mg. with sugar in the urine as potentially diabetic even though there are no symptoms. Overlooking these cases would be much like overlooking cases of minimal tuberculosis found on routine x-ray examination of the chest in persons without symptoms.

INCIDENCE OF DIABETES

The results of the analysis of the sugar tolerance tests made in 479 selectees with glycosuria are shown in table 1. In this group of 479 cases 190 persons had normal blood sugar tolerance curves, 38 were potentially diabetic and 251 were diabetic according to Joslin's criteria, with peaks in blood sugar curves exceeding 170 mg. If the criteria of others should be used, these figures would vary. If a blood sugar level above 180 mg. is used as the lower diagnostic limit there would be 202 diabetic (42 per cent) and 87 potentially diabetic in this group of 479 cases. If, further, cases with normal fasting blood sugar and with maximum blood sugar of 180 to 200 mg. in which the two hour blood sugar was under 120 were excluded, the diabetic group would be reduced to 158 cases (33 per cent), and the potential and borderline cases would be increased to 131 cases in this group of 479 cases.

TABLE 1.—*Sugar Tolerance Results in 479 Persons Who Had Glycosuria Found on Routine Examinations at Induction Center*

Number of Cases	Fasting Blood Sugar, Mg. per 100 Cc.	Maximum Blood Sugar After Glucose Ingestion, Mg. per 100 Cc.	60-75 Mg., No. of Cases	80-115 Mg., No. of Cases	120-140 Mg., No. of Cases	145-165 Mg., No. of Cases	175-225 Mg., No. of Cases	235-300 Mg., No. of Cases
190	65-130	160	34	148	8	..	..	..
38	80-130	165	..	23	9	6	..	..
49	80-130	170-180	..	32	15	2	..	..
86	80-130	180-200	..	44	25	14	3	..
69	80-130	200-260	..	15	22	16	16	..
8	80-130	265-385	..	1	2	1	4	..
39	135-365	200-544	..	..	8	6	13	12

With the available data of the 190 normal sugar tolerance curves it was possible to study 114 of these in relation to glycosuria during the tests. Of these 114 cases 69 showed no glycosuria during the sugar tolerance tests, whereas 45 showed sugar in some or all of the urine specimens during the tests, and the peak of the blood sugar curves was usually less than 140 or 150 mg. The finding of renal glycosuria appeared much the same as previously reported by Blotner and Hyde.[1] In the normal curves the fasting blood sugar was 65 to 100 mg. in 126 cases, 100 to 120 mg. in 58 cases and 120 to 130 mg. in 6 cases; the two hour blood sugar was 60 to 75 mg. in 34 cases, 80 to 115 mg. in 146 cases and 120 to 140 mg. in 8 cases.

In 212 of the 251 cases of diabetes the fasting blood sugar was normal and most of the fasting urine speci-

6. The Health Status of NYA Youth: A Nationwide Survey of Youth on the Out of School Work Programs of the National Youth Administration, National Youth Administration and U. S. Public Health Service, Washington, D. C., Government Printing Office, 1942, pp. 40 and 76.

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8. Gray, H.: Blood Sugar Standards: I. Normal and Diabetic Persons, Arch. Int. Med. **31**: 241 (Feb.) 1923.

9. Joslin, E. P.; Root, H. F.; White, Priscilla, and Marble, Alexander: The Treatment of Diabetes Mellitus, ed. 7, Philadelphia, Lea & Febiger, 1940, p. 132.

10. Grafe, E.: Metabolic Diseases and Their Treatment, Philadelphia, Lea & Febiger, 1933, p. 258.

11. Osler, W.: Principles and Practice of Medicine, edited by H. A. Christian, ed. 15, New York, D. Appleton-Century Company, Inc., 1944, p. 594.

mens were sugar free. The fasting blood sugar was 80 to 100 mg. in 55 cases, 100 to 120 mg. in 112 cases and 120 to 130 mg. in 40 cases. The peak of the blood sugar curves rose to levels above 170 mg. to as much as 385 mg. in one-half or one hour after the ingestion of glucose and some or all of the postprandial urine specimens contained sugar.

The two hour blood sugar levels ranged from 80 to 225 mg. If one would judge this group of diabetic patients by the fasting urine and blood sugar finding, a diagnosis of diabetes would not be made. Typical sugar tolerance curves of the diabetic are given in the accompanying chart. The diagnosis of potential diabetes was made in 38 cases in which the peak of the sugar tolerance was 165 mg. However, there was a considerable amount of sugar in the urine in these cases which is hard to explain on another basis. They should be classed at least as potential or incipient cases and treated as such until proved otherwise.

The degree of glycosuria during the sugar tolerance tests usually ranged between 2 plus and 3 plus in all the diabetic and potential cases. However, there was an appreciable number with sugar 1 plus and comparatively few cases with sugar 4 plus in the urine during the tests.

There were only 39 cases in which abnormal fasting blood sugar levels ranged from 135 to 365 mg. with fasting glycosuria. Of these the maximum blood sugar levels varied from 200 to 544 mg. per hundred cubic centimeters in one-half or one hour after the ingestion of the glucose, and the two hour blood sugar levels ranged from 120 to 500 mg. per hundred cubic centimeters.

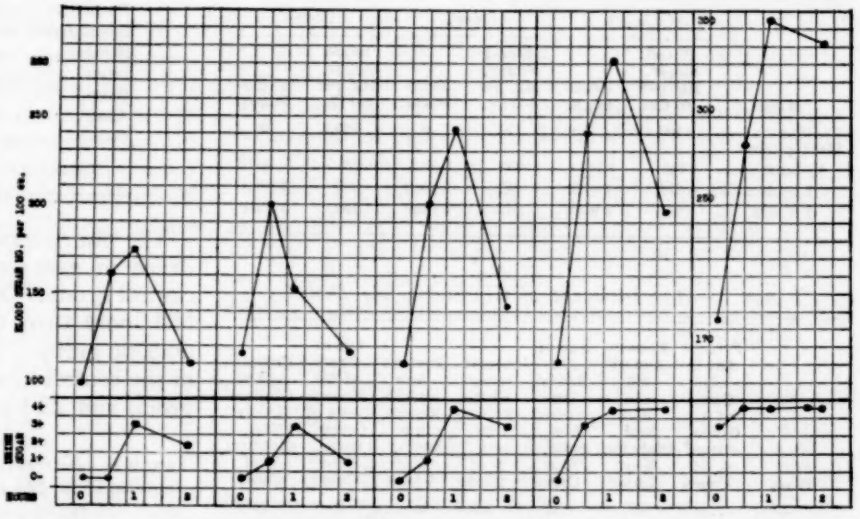
The amount of glycosuria found on the routine examination did not indicate always the severity of the diabetes because there were cases of urine sugar 1 plus giving blood sugar curves of moderately severe diabetes and cases of sugar 3 or 4 plus giving curves of mild diabetes.

An estimate of the total number of the diabetic among the 1,383 cases of glycosuria was made as follows: With very strict criteria for the diagnosis, one third of the 479 selectees with sugar 1 plus in the urine were diabetic. If this fact is applied to the group of 651 cases of glycosuria 1 plus there would be 217 cases of diabetes. In view of the findings in the cases of glycosuria 1 plus it appears reasonable that in the 229 cases of sugar 2 plus in the urine one half were diabetic, giving an additional 114 cases. Nearly all the 503 cases of sugar 3 plus and 4 plus in the urine are considered as diabetic except for a possible 45 cases of renal glycosuria which Blotner and Hyde[12] found in 9 per cent of the glycosurias in selectees, making another 458 diabetic. The total of the 217, 114 and 458 cases amounts to 789 diabetic, which is 57 per cent of the 1,383 cases showing glycosuria. This proportion of the diabetic to the total number of subjects with glycosuria is the same as noted in our first study here.[1] In other words it means that with conservative diagnosis there were 789 with diabetes, or 1.1 per cent, in this group of 69,088 selectees in addition to many potential or borderline cases.

AGE

Glycosuria and diabetes may be found at any period from infancy to old age. Some of the men examined here knew that they had had glycosuria since childhood. The incidence of glycosuria and diabetes, newly discovered and known cases, at the various ages are given in table 3.

Usually one thinks of glycosuria and diabetes as occurring with special frequency in the older groups, particularly between the ages of 50 and 60 years, and the severe cases as being in the younger persons and the mild cases in the older ones. In this study a large number of mild cases of diabetes occurred in the younger age group. It appears that in the past, the young with severe diabetes were recognized because they had symptoms, whereas the young with mild diabetes were not recognized because they were free of symptoms. Glycosuria is recognized more readily in older persons because they are examined more frequently for various complaints.



Sugar tolerance after ingestion of 100 Gm. of glucose in selectees found to have diabetes.

The age incidence of the selectees with glycosuria and with diabetes was compared with that of a control group of nondiabetic selectees. It is difficult to have definite representative figures for the age incidence of the control group because of changing directives from time to time. Nevertheless the ages of a control group presented here gives some idea of their incidence. The present ages of 30 to 37 years appear about twice as frequently in the selectees with glycosuria and diabetes as in the control group. In contrast, the ages of 18 to 23 years and 24 to 29 years occurred much less frequently in the glycosuric and diabetic than in the control group.

In a study of the age at onset of diabetes in 110 known cases it was of particular interest to note how much the incidence of diabetes shifted to the lower ages, even into infancy. Whereas in the newly discovered diabetic 46.2 per cent were aged 31 to 37 years compared with 23 per cent in the control group, of the known diabetic only 12.7 per cent had the onset of this disease during this age period. Furthermore, one would hardly believe that 42.7 per cent of these

12. Blotner, H., and Hyde, R. W.: Renal Glycosuria in Selectees and Volunteers, J. A. M. A. **122**: 432 (June 12) 1943.

diabetic persons had a known beginning of the disease at ages varying from 2 to 17 years. This illustrates how clearly the cumulative effect of age is attained in later years of life.

PAST HISTORY OF GLYCOSURIA AND DIABETES

With the finding of a high incidence of glycosuria and diabetes it appeared of interest to determine how many knew they had diabetes or sugar in the urine previously and for how long. These results are shown in table 4.

Of the 1,383 selectees with glycosuria 340, or 24.1 per cent, knew they had diabetes or sugar in the urine previously. Of these, 110 gave a history of diabetes with duration varying from one month to eighteen years. In addition, 230 persons said they had sugar in the urine anywhere from one month to twenty years. It is likely that many of these were diabetic.

TABLE 2.—*Illustrations of Newly Diagnosed Cases Showing that a Fasting Normal Blood Sugar and Sugar Free Urine Do Not Rule Out Diabetes*

	Case 1		Case 2		Case 3	
Time	Blood Sugar, Mg. per 100 Cc.	Urine Sugar	Blood Sugar, Mg. per 100 Cc.	Urine Sugar	Blood Sugar, Mg. per 100 Cc.	Urine Sugar
Fasting	106	0	90	0	120	0
After glucose						
½ hour	216	3 plus	200	1 plus	220	0
1 hour	298	4 plus	240	3 plus	270	3 plus
2 hours	247	4 plus	175	3 plus	193	3 plus

TABLE 3.—*Age Incidence of Glycosuria and Diabetes*

Age, Years	Present Age in 1,316 Cases of All Glycosurias, % of Cases	Present Age of 206 Old and New Diabetic, % of Cases	Age of 156 Newly Discovered Diabetic, % of Cases	Age at Onset of 110 Known Diabetic, % of Cases	Present Age of 110 Known Diabetic, % of Cases	Age at Onset of 230 Known Cases of Glycosuria, % of Cases	Present Age of Control Group Nondiabetic, % of Cases
2-4	....	....	....	3.6	....	0	..
5-8	....	....	....	9.1	....	0.9	..
9-13	....	....	....	13.6	....	2.2	..
15-17	....	....	....	16.3	....	9.1	..
18-23	21.5	30.1	26.9	19.1	34.5	26.1	37
24-29	29.7	28.6	26.9	25.4	30.0	31.3	40
30-37	48.7	41.3	46.2	12.7	35.5	30.4	23

FAMILY HISTORY OF DIABETES

The inheritance of diabetes had been pointed out by many writers, and consequently this subject was studied in these selectees. There was a family history of diabetes in 341 cases, or 24.7 per cent of the 1,383 selectees with glycosuria. This compares with a family history of diabetes in 5.2 per cent of a nondiabetic group of selectees [12] at this station. In contrast, 43.7 per cent of 329 persons who knew they had diabetes or glycosuria gave a family history of diabetes. A family history of diabetes was obtained in 48.1 per cent of 106 persons who knew they had diabetes and in 41.7 per cent of the 223 selectees with a history of sugar in the urine previously.

In 300 of these cases there was a family history of diabetes in 1 member of the family, and in 41 cases there was a history of diabetes in 2 to 4 members of the family with a total of 92 relatives. In 8 of these both mother and father had the disease.

NATIONALITY

The incidence of nationalities of 1,383 persons with glycosuria and of 332 diabetic consisting of 222 newly discovered and 110 known diabetic were compared with those of a control group of 7,350 consecutive persons at this induction center as previously determined.[1] The results are shown in table 6.

TABLE 4.—*Past History of Glycosuria and Diabetes in 340 of the 1,383 Selectees with Glycosuria*

Known Duration of Glycosuria	Diabetes, No. of Cases	Glycosuria, No. of Cases
1-6 months	16	99
1-7 years	62	106
8-20 years	32	34
Total	110	230

TABLE 5.—*Diabetic Relatives of 341 Selectees with Glycosuria*

Relation	No. of Relatives
Mother	132
Father	95
Grandparent	57
Brother	34
Sister	29
Uncle	29
Aunt	19
Cousin	6
Total	392

The old Americans appeared to have the lowest incidence of glycosuria and diabetes compared with the control group. On the other hand, the Canadian-French had more than twice as many in the glycosuria and diabetic group. The Irish, who constituted 11 per cent of the control group, had 18.6 per cent in the glycosuria group and 22.3 per cent of the diabetic. The English had a much greater incidence of diabetes than expected because they constituted 11.5 per cent of the diabetic compared with 5 per cent of the controls and 8.4 per cent of the glycosuric. The Jews had 8.4 per cent of the glycosuric compared with 6 per cent of the control group, which is only a slight increase. A most striking observation was that the incidence of Jews was the same in the 332 newly discovered and known diabetic as in the controls. Furthermore, the incidence of Jews was

TABLE 6.—*Incidence of Nationality in 1,383 Cases of Glycosuria and in 332 Diabetic, of Whom 222 Were Newly Discovered and 110 Were Known Diabetic*

Nationality	1,383 Glycosurias, % of Cases	332 Diabetic, % of Cases	222 Newly Found Diabetic, % of Cases	110 Known Diabetic, % of Cases	Control Group 7,350 Selectees, % of Cases
Canadian-French	20.3	18.4	17.1	20.9	9
Irish	18.6	22.3	24.3	18.2	11
Old American	12.3	13.3	14.0	11.8	45
Italian	8.8	6.9	7.2	6.4	10
English	8.4	11.5	11.3	11.8	5
Jewish	8.4	5.8	4.1	9.1	6
Portuguese	5.8	6.6	7.7	4.5	5
Other nationalities	17.4*	15.3	14.3	17.2	9

* Other nationalities included 51 Polish, 43 Scotch, 33 Swedish, 18 Negroes, 17 Lithuanians, 13 Finnish, 11 Greek men and 55 miscellaneous German, Syrian, Norwegian, Chinese, Armenian, Danish, Brazilian, Albanian and Russian individuals.

only 4.1 per cent in the newly discovered cases compared with 9.1 per cent of the known cases. In the past it was considered that the Jews had a much greater incidence of glycosuria and diabetes than other nationalities. This study does not substantiate this idea. It appears likely that the reason glycosuria and diabetes were found so frequently in the Jews in the past is that they live in urban areas chiefly and appear to visit the doctor quite readily for various complaints and consequently more routine urine examinations were made. As a result, more recognized cases of glycosuria and diabetes were found in them. The incidence of "other nationalities" appears appreciably greater in the glycosuric and diabetic group than in the controls. In a study of nationalities as commonly understood of a large group of selectees, there are, no doubt, some inaccuracies in determining them.

COMMENT

The results of this investigation show that glycosuria and diabetes were relatively common in this group of selectees aged 18 to 37 years. Whereas glycosuria was noted in 0.8 per cent in a previous group of selectees at this station, glycosuria was found in 2.0 per cent of a subsequent group of selectees at this station. Nevertheless the proportion of the number of diabetic to that of the glycosuric was the same in the two studies. It is difficult to explain this increase because the selection of selectees and the methods were practically the same in the two studies except the age, which was 18 to 45 years in the previous study and 18 to 37 years in the present one. A possible factor may be that the men had been under the strain of an additional one and one-half to two years of war in this investigation. The health of the selectees in general was about the same in the two studies.[3] However, there were many men examined during this study who were previously deferred for occupational reasons and had worked long hours daily.

This finding is in sharp contrast to the rare case of glycosuria and diabetes found in inductees at the New Orleans Induction Center. The variation deserves further study in Southern states to determine whether climate or other factors are responsible for this.

The first major factor responsible for this difference in results appears to be the method of selection of selectees in Louisiana, as shown in the following letter from their headquarters:[13] "The report referred to in your communication made by Drs. Spellberg and Leff in the Sept. 22, 1945 issue of THE JOURNAL, which appears to be lower than the incidence of glycosuria or diabetes in the Boston Induction Center, may be due to the fact that at the time of this report local boards were screening out registrants with this manifestly disqualifying physical defect and therefore not tendering them to the induction center. However, recent estimates indicate that registrants now being rejected by the New Orleans Induction Station for glycosuria are correspondingly lower." Furthermore, in New Orleans the test for sugar in the urine was made with Benedict's solution and a 1 plus reaction was usually repeated and if it was negative was considered as such.[14] If the incidence of glycosuria is less frequent in Louisiana than in this district, Mills[15] and Petersen[16] perhaps would suggest that it was due to climate because they believe that the incidence of diabetes is lower in the Southern than in the Northern states. In contrast Joslin[17] is of the opinion that climate is not a factor in the incidence of diabetes.

The recognition of glycosuria and diabetes is important because only 24.6 per cent of these young men knew they had diabetes or sugar in the urine previous to this examination. Apparently the disease was mild in many of the cases and caused no symptoms.

The results of this investigation emphasize the fact that an individual may have a normal fasting blood sugar and sugar free urine and yet have diabetes. The usual routine practice, particularly in hospitals, of having fasting blood and urine sugar determinations made to diagnose diabetes is a poor one because many cases of diabetes may be overlooked this way if the results are normal. It is important to do some sugar tolerance test or to obtain nonfasting blood and urine sugar determinations. If single blood and urine sugar analyses are to be obtained, it is well to determine the blood sugar one-half to one hour after a heavy carbohydrate meal and the urine sugar one hour to one and one-half hours after this meal. In this study, if the diagnosis of diabetes had been based on the fasting blood and urine sugar results, diabetes would have been recognized in only a few cases.

There appears to be a great field for the practice of preventive medicine in diabetes. Routine urine examinations should be made on all people at all ages to discover the cases of glycosuria without symptoms. This group would be a good one to follow, since Fitz[18] believes that in most cases lack of knowledge makes the assured preventability of diabetes very elusive. Furthermore, it is essential to observe over a period of years individuals thought initially to have nondiabetic glycosuria. Marble, Joslin, Dublin and Marks[19] found in a large group of patients who at first observation were believed to have nondiabetic glycosuria that 9.9 per cent developed true diabetes subsequently. Proper care of the diet, weight and physical activity[20] of these individuals we hope may prevent or delay the onset of true or severe diabetes with symptoms. Particular attention should be given to individuals of certain nationalities and those with a family history of diabetes.

SUMMARY

Glycosuria and diabetes which occurred in 69,088 consecutive selectees aged 18 to 37 years who appeared for routine examinations prior to induction into the Army was studied.

The incidence of glycosuria was found to be 1,383 cases, or 2.0 per cent of the men examined. Of this group only 24.6 per cent knew that they had previously

13. Shaffer, W. D., Colonel, A. G. D., Selective Service, Louisiana State Headquarters, New Orleans: Personal communication to the author.
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16. Petersen, W. F., and Milliken, M. E.: The Patient and the Weather, Ann Arbor, Mich., Edwards Brothers, Inc., 1937, vol. 4, pt. 2, p. 729.
17. Joslin, E. P.: The Universality of Diabetes, J. A. M. A. **115**: 2033 (Dec. 14) 1940.
18. Fitz, R.: The Prevention of Diabetes Mellitus, New England J. Med. **222**: 623, 1940.
19. Marble, A.; Joslin, E. P.; Dublin, L. I., and Marks, H. H.: Studies in Diabetes Mellitus, Nondiabetic Glycosuria, Am. J. M. Sc. **197**: 533, 1939.
20. Blotner, H.: Effect of Prolonged Physical Inactivity on Tolerance of Sugar, Arch. Int. Med. **75**: 39 (Jan.) 1945.

had either diabetes or glycosuria for periods ranging from one month to twenty years.

An analysis was made of the sugar tolerance tests which were performed in 479 selectees with glycosuria, in most instances with sugar 1 plus in the urine. According to Joslin's diagnostic criteria 190 persons of this group had normal blood sugar tolerance curves, although an appreciable number had sugar in some or all of the urine specimens during the test. Potential diabetes was diagnosed in 38 cases and diabetes was diagnosed in 251, or 52 per cent, of these 479 cases. Using much restricted diagnostic criteria, one third of these 479 cases would be diagnosed as diabetes with a corresponding increase in the potential or borderline cases. Many persons with sugar 1 plus in the urine which did or did not appear in the subsequent urine tests had diabetes.

It was estimated that 57 per cent of the 1,383 cases of glycosuria, or 1.1 per cent of this group of 69,088 selectees, had diabetes in addition to many potential or borderline cases.

All the diabetic except 39 had normal fasting blood sugar levels, and nearly all the fasting urine specimens were sugar free. It is important to do a sugar tolerance test if glycosuria is found on routine examination of any person to establish the diagnosis of diabetes; or, if only one blood and urine sugar determination is to be made, a good time would be one hour after a heavy carbohydrate meal. It is important to realize that a normal fasting blood sugar and sugar free urine do not rule out the diagnosis of diabetes.

Glycosuria and diabetes appeared more frequently in the older than younger age groups. Nevertheless a large percentage of the selectees with glycosuria and diabetes were 18 to 23 years of age. Many of the young selectees had mild diabetes which was not recognized previously, possibly because they were symptomless. Of the known diabetic 42.7 per cent had the onset of the disease at ages ranging from 2 to 17 years and only 12.7 per cent between the ages of 30 and 37 years. In contrast, 46.2 per cent of the newly discovered diabetic and 23 per cent of the control nondiabetic selectees were in the 30 to 37 year age group. This illustrates the cumulative effect of age.

The inheritance of diabetes was of interest because 24.7 per cent of the 1,383 selectees with glycosuria gave a family history of diabetes as compared with 5.2 per cent of a control group of nondiabetic selectees. In contrast, 43.7 per cent of the selectees with a past history of glycosuria or diabetes gave a family history of diabetes.

The nationality study was of unusual interest. The old Americans appeared to have the lowest incidence of glycosuria and diabetes, whereas the Canadian-French, Irish, English and certain other nationalities had the greatest incidence. It has been proverbial that the Jews have the greatest incidence of diabetes. This study does not bear this out, because the incidence of Jews in the diabetic group was 5.8 per cent, practically the same as in the control group. Furthermore, they constituted only 4.1 per cent of the newly discovered diabetic and 9.1 per cent of the known diabetic.

As a result of this study there appears to be a great field for the practice of preventive medicine in the treatment of diabetes. Attention to inheritance, nationality and the potential or borderline cases of diabetes by diet and proper regimen, it is hoped, may help in preventing them from developing true or severe diabetes.

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THE USE OF PARA-AMINOBENZOIC ACID IN ENDEMIC (MURINE) TYPHUS

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Evidence gradually is accumulating that para-aminobenzoic acid is effective in experimental infections induced by several types of rickettsial organisms. Studies on yolk sacs infected with Rickettsia prowazeki (epidemic typhus) [1] have shown that para-aminobenzoic acid is reasonably effective in inhibiting the growth of the organisms. A similar effect was observed when penicillin was used.[2] Under the same circumstances para-aminobenzoic acid was remarkably effective in eggs infected with Rickettsia mooseri (murine typhus).[1] The organisms of spotted fever (Rickettsia rickettsii) were inhibited in chick embryos [3] even more easily than were the organisms of murine typhus. On the other hand, there was no appreciable effect on Rickettsia orientalis.[3] An inhibitory effect was also observed in guinea pigs infected with R. rickettsii.[4] Experimental infections of rodents with R. orientalis were amenable to therapy with para-aminobenzoic acid when the drug was given by simultaneous oral and parenteral administration.[5]

Clinically, promising results were obtained by Yeomans and his associates [6] with para-aminobenzoic acid in louse borne typhus and by Rose, Duane and Fischel [7] in spotted fever. These results and the experimental results in murine typhus suggested that the drug might be of value in human endemic typhus.

METHODS

No attempt was made to select the patients for this study. The proposed study was presented to the Bexar County Medical Society and the physicians in this

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This study was initiated in collaboration with Major J. Bagwell of this station. Major M. Pollard of the Eighth Service Command Laboratory arranged for the determinations of the Weil-Felix dilutions and the complement fixation tests. Major R. H. Broh-Kahn and Major E. Ferrell of the School of Aviation Medicine and Brig. Gen. Stanhope Bayne-Jones and Col. J. Sadusk of the Surgeon General's Office have been helpful in interpreting the results of this study. The statistical analysis was made by Lieut. A. Kemp of the Department of Statistics.

Dr. L. C. Robbins of the San Antonio Health Department and Dr. A. O. Severance of the Bexar County Medical Society assisted in calling the attention of the physicians in this vicinity to this experimental method of treatment. Dr. Rickard of the Rockefeller Foundation called attention to several cases of typhus that were reported to him.

Physicians in this area who referred patients for treatment included Lieutenant Colonel Winans and Captain Horn of Brooke General Hospital, Dr. Riegler of the Santa Rosa Hospital, Dr. Nicoleau of the Medical and Surgical Hospital, Dr. Zeitlin of the Robert B. Green Hospital and Drs. M. W. Baranco, N. L. Barker, J. C. Barton, A. Brewer, C. C. Cade, W. H. Cade, J. R. Callan, J. J. DeLeon, C. H. Dittman, S. Ellis, W. H. Geissler, G. H. Geyer, A. M. Graves, F. N. Haggard, D. Jackson, H. M. Johnson, R. Lozano, M. M. Minter, O. S. Moore, E. L. Mueller, J. C. Parsons, T. A. Pressly, J. L. Pridgen, H. P. Revely, R. A. Roberts, Rogers, T. H. Sharp, I. C. Skinner and E. W. Weatherford.

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7. Rose, H. M.; Duane, R. B., and Fischel, E. E.: The Treatment of Spotted Fever with Para-Aminobenzoic Acid, J. A. M. A. **129:** 1160-1161 (Dec. 22) 1945.

area were requested to refer patients for treatment as soon as, in their opinion, there was a probability of endemic typhus. The patients were at all times under the direct supervision of the physicians to whom they reported for treatment. However, the physicians were generous in their cooperation, and in most cases the treatment was continued without interruption according to the plan presented in this report.

Patients were reported as having a positive diagnosis of endemic typhus when serologic studies demonstrated either a positive Weil-Felix reaction in a 1 : 160 dilution or a change from negative to positive in the complement fixation reaction and, in addition, when their clinical picture was considered characteristic of typhus. These criteria were similar to those employed by Stuart and Pullen [8] in their study of murine typhus.

Treatment consisted in the administration of 2 Gm. of para-aminobenzoic acid every two hours until the temperature had returned to a normal level. Early in the study an initial dose of 4 Gm. was given to some patients, but this was discontinued because it often caused nausea and because other studies [9] showed that the high plasma levels attained initially fell, after a few doses, to levels similar to those obtained with initial 2 Gm. doses. The para-aminobenzoic acid was given either in capsules or as a powder, and, as Yeomans and his associates [6] found, it was tolerated better when administered with sodium bicarbonate in a glass of water.

No attempt was made to obtain routine blood samples for estimation of the para-aminobenzoic acid concentration. Earlier studies in this laboratory [9] and elsewhere [10] have shown that this drug is absorbed and excreted very rapidly, so that the exact plasma level obtained varies considerably with the interval since its last administration.

It was not possible to observe a controlled series of patients under strictly comparable conditions, but an attempt was made to do so. Some of the patients in the series not receiving the drug were those who had refused treatment with the drug, and the remainder consisted of those who had been ill recently in the same hospitals.

A number of patients received para-aminobenzoic acid in the absence of a rising Weil-Felix titer. These were considered not to have had typhus. Altogether 17 such patients were treated, each receiving a total dosage of from 10 to 196 Gm. of para-aminobenzoic acid.

Despite the fairly typical clinical picture presented by most of the cases, the duration of fever was believed to be the only criterion sufficiently objective to serve as an index of the duration of the disease. Even this was not an entirely reliable criterion in every case, since the assumption was made that the onset of fever was accurately known, yet in most cases the only evidence was the patients' impression. As is well known, the onset is often gradual, with several days of prodromal symptoms,[11] and in others the onset may be sudden, accompanied by headache, chills and fever. The occurrence of the latter symptoms arbitrarily has been designated as the onset of the disease; otherwise the statement of the patient that a fever was present along with other evidence of the disease, usually prostration, was accepted. It was decided arbitrarily to consider that the temperature had returned to normal when it dropped to 99 F. and remained there, other than for an occasional slight rise of short duration.

TABLE 1.—*Results with Patients Receiving Para-Aminobenzoic Acid*

Patient	Age	Sex	Days of Fever	Day PABA Begun	Days Fever After PABA Begun	PABA, Gm.	Weil-Felix Test: Day Blood Taken	Weil-Felix Test: Titer 1 :	Complement Fixation: Day Blood Taken	Complement Fixation: Result
W. P. C.	38	♂	5	4	1	63	5	320	5	Negative
L. M. C.	21	♀	7	3	4	136	10	2,560*	10	Positive †
R. P. I.	78	♂	7	5	2	72	7	640	7	Positive
C. H. P.	54	♀	7	6	1	48	6	10	9	Positive
L. C. T.	21	♂	8	6	2	72	10	320*	..	.....
J. V.	27	♀	8	7	1	45	11	5,120*	7	Positive
W. C. D.	57	♀	8	8	0	48	8	5,120*	8	Positive
C. K.	33	♂	9	5	4	80	5	640	5	Negative
L. O.	30	♂	9	3	6	146	10	160*	10	Negative
R. H. S.	24	♂	9	7	2	66	6	320	6	Negative
J. J. L.	74	♂	10	4‡	6	96	9	640*	9	Positive †
J. H. V.	30	♂	10	4	6	146	13	5,120*	8	Positive
J. D. D.	26	♂	10	7	3	87	7	320	..	.....
G. G.	63	♂	11	7	4	71	8	160	8	Positive
H. A. McB.	39	♂	11	7	4	124	9	640	9	Negative
J. E. N.	63	♂	11	7	4	96	11	2,560*	7	Positive
J. C.	32	♀	11	8	3	96	8	160	8	Negative
G. R.	21	♀	11	8	3	123	22	5,120*	8	Negative
C. F.	16	♀	11	8	3	69	9	1,280	9	Positive
I. W.	15	♀	11	9‡	2	69	9	160*	4	Negative
J. A. (died)	78	♂	11	10	1	84	8	640	..	.....
M. J.	17	♀	11	10	1	48	10	640	10	Positive
P. C. G.	38	♂	12	4	8	156	10	320*	8	Negative
C. P. S.	40	♀	12	5	7	138	10	320	..	.....
A. F. S.	47	♀	12	6‡	6	141	26	40*	26	Positive †
L. B. S.	25	♀	13	6	7	141	13	5,140*	13	Positive †
A. B.	17	♂	12	9	4	90	10	1,280	10	Negative
C. T. B.	58	♂	15	11	4	42	12	640	12	Positive
A. J. P.	45	♂	16	10	6	102	12	1,280*	12	Negative
Mean	38.5		10.3	6.5	3.8	94.9	10.1		9.1	

* Earlier sample gave lower titer. † Test on earlier sample was negative.
‡ Received a sulfonamide before the administration of para-aminobenzoic acid began.

RESULTS

The group treated with para-aminobenzoic acid consisted of 29 patients considered to have endemic typhus. The group not receiving the drug consisted of an equal

8. Stuart, B. M., and Pullen, R. L.: Endemic (Murine) Typhus Fever: Clinical Observations of 180 Cases, Ann. Int. Med. **23:** 520-536, 1945.

9. Smith, P. K.; Bayliss, J. R.; Ogorzalek, S., and McClure, M.: Metabolism of Large Doses of Para-Aminobenzoic Acid, Federation Proc. **5:** 134-155, 1946.

10. Strauss, E.; Lowell, F. C., and Finland, M.: Observations on the Inhibition of Sulfonamide Action by Para-Aminobenzoic Acid, J. Clin. Investigation **20:** 189-197, 1941.

11. Dyer, R. E.: The Rickettsial Diseases, J. A. M. A. **124:** 1165-1172 (April 22) 1944. Stuart and Pullen.[8]

number of patients. So far as could be determined the two series of patients were roughly comparable. A summary of the data appears in tables 1 and 2. In the untreated group the average age was 39.0 years, and there were 18 males out of a total of 29 in the series (62 per cent), while in the treated group the average age was 38.5 years, and 17 of 29 were males (59 per cent). In the treated group 5 of the patients

TABLE 2.—*Results with Patients Not Receiving Para-Aminobenzoic Acid*

Patient	Age	Sex	Days of Fever	Weil-Felix Test: Day Blood Taken	Weil-Felix Test: Titer 1:
M. B.	35	♀	6	8	640
M. P.	48	♀	7	6	640
C. G.	32	♀	10	..	640
L. L.	7	♂	10	..	640
C. M.	11	♀	11 †	4	640
M. N.	28	♀	11	4	640
C. C. N.	31	♀	11 †	6	160
B. F. McK.	30	♂	12	10	1,280*
C. M.	21	♂	12	7	5,120*
B. R.	11	♂	12	3	320
D. R.	44	♂	12	14	640*
E. B.	45	♀	13 †	15	2,560
C. N.	30	♀	13	13	640
G. B. (died)	49	♂	13 †	..	640
C. C. G.	45	♂	13	..	160
G. K. M.	64	♂	13	6	320
B. D.	29	♂	14	11	320
E. M.	56	♂	14	14	320
J. O.	28	♂	14	12	2,000*
L. McK.	45	♂	14	9	160*
J. S.	43	♀	14	7	160*
S. V.	45	♀	15	10	640
R. H. W.	38	♂	15	12	320
R. A. K.	32	♂	16	7	160
M. O.	43	♂	16 †	..	160
A. B. W.	39	♂	16	..	160
V. D. L. G.	30	♂	17	..	160
A. Z.	44	♀	17	4	160
R. S. B.	72	♂	21	22	1,280
Mean	39.0		13.2	9.4	

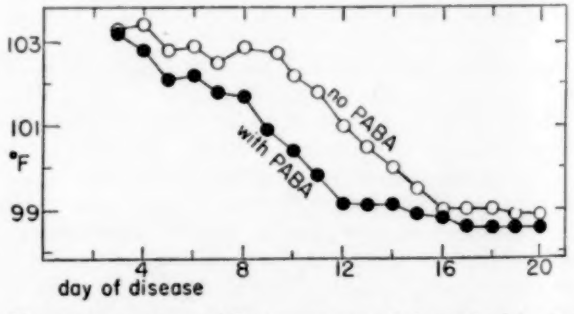
* Earlier sample gave lower titer. † Received a sulfonamide.

were more than 60 years of age and in the control group 2 of the patients fell into a similar age group. The average highest observed temperature was approximately 104 F. in both series. These data are near the averages found by Stuart and Pullen [8] in their series of 180 cases, but in the untreated series of the present study the average number of days of fever was 13.2 compared with 15.6 in their series.

There was one fatality in each series. The patient in the group not given para-aminobenzoic acid was treated for four days with penicillin 20,000 units every four hours, and three days later, on the day before death, penicillin was again administered in a dose of 20,000 units every three hours. The hemoglobin on admission was 10.6 Gm. per hundred cubic centimeters. The highest temperature recorded was 105 F., but this persisted for four days. He died on the ninth hospital day. The patient treated with para-aminobenzoic acid who died was a Latin American aged 78 who was admitted to the hospital on the fifth day of his disease with severe nausea and vomiting, severe headache and dehydration. His condition was complicated with cardiac failure, for which he was digitalized. His hemoglobin on admission to the hospital was 8.8 Gm. per hundred cubic centimeters. Frequent transfusions were administered. He was given penicillin 20,000 units every three hours from the time of admission up until the day of death. He was also given sulfadiazine 1 Gm. every four hours from the day of his admission to the hospital until treatment with para-aminobenzoic acid was started. Treatment with para-aminobenzoic acid did not begin until the tenth day of his illness and continued for four days, by which time the temperature had returned to normal, but the cardiac insufficiency and edema increased and he died four days after the last dose of para-aminobenzoic acid. He was afebrile for the entire period after cessation of treatment. His leukocyte count on the day of death was 6,750 per cubic millimeter. The final diagnoses were typhus, congestive heart failure and pulmonary edema.

Many of the patients in both the treated and the control series received one of the sulfonamides, usually sulfadiazine, in the course of their disease and some (J. A., A. F. S. and I. W. in the treated series and G. B., R. S. B., E. B. and R. A. K. in the other series) received penicillin. Still others in the series not given para-aminobenzoic acid were given other drugs such as atabrine (quinacrine hydrochloride) (R. S. B., E. B., M. O.), mapharsen (oxophenarsine hydrochloride) (E. B., M. O., R. H. W.) and others believed by the physician in charge to be effective in the disease. The latter two drugs were administered, not because of possible confusion with malaria, but only after a definite diagnosis of typhus had been established. The results obtained with them did not suggest that they were effective.

In no case was there evidence of toxic effects that could be attributed to the para-aminobenzoic acid. Yeomans and his associates [12] have observed low leukocyte counts in epidemic typhus patients receiving para-aminobenzoic acid. One patient had a count of 2,900 after receiving para-aminobenzoic acid for twenty-four hours and another had a count of 2,950 after he had been afebrile for two days and twenty-four hours after the last dose of the drug. Unfortunately it was not possible to obtain frequent leukocyte counts on the patients reported in this study, but in 9 of the patients with endemic typhus and in 10 patients without typhus, who also received para-aminobenzoic acid, leukocyte counts done before and again from one to seven days after the administration of the drug had begun there were no leukocyte counts below 4,200. Nevertheless it should be emphasized that low leukocyte counts have been observed by others, and the experience with the drug so far suggests that this is the most likely toxic manifestation. Although no cases of agranulocytosis after para-aminobenzoic acid have yet been reported, it



The average maximum daily temperatures of the patients in the two groups. In constructing the curves the assumption is made that patients released from the hospital with a normal temperature continued to have maximum daily temperatures of 98.6 F.

is probable that daily leukocyte counts, with cessation of the drug if the count is below 3,000, will do much to prevent dangerous toxic effects.

As reported by Stuart and Pullen,[8] a few of the patients in each group had a slight and brief rise in temperature after it had been at a normal level for

12. Yeomans, A.: Personal communication to the author. Yeomans, Murray and Zarafonetis.[6]

twenty-four hours or more. In no case did this seem to interfere with the uneventful convalescence of the patients.

Using the aforementioned criterion of duration of fever, it becomes apparent (tables 1 and 2 and accompanying chart) that on the whole the patients treated with para-aminobenzoic acid did better than those that were not treated. Of those not treated, 22 of 29 had a fever for twelve or more days, whereas in the treated group only 7 of 29 had a fever for so long. Although the means of the duration of fever in the two groups (10.3 and 13.2 days respectively) are not widely different, it has been shown statistically that the probability of the difference occurring by chance is less than 1 in 100.

COMMENT

The absence of demonstrable toxic effects from the drug in the 29 patients as well as in the 17 other patients who did not have typhus suggests that perhaps even larger doses of the drug might be employed with safety. This was not done in the present study for two reasons: First, once a definite dose was decided on, it was believed preferable not to change it during the study and, second, it is felt that neither with this series of cases of endemic typhus nor with the series of treated cases of epidemic typhus [6] were there sufficient data concerning toxicity to exclude the occasional patient who may respond unfavorably to the drug. If larger doses are employed, it would seem wise to do so only under carefully controlled conditions with daily determinations of the plasma drug level and leukocyte counts so that any toxic effects might be observed early enough to discontinue the drug before extensive damage had taken place. Because of its rapid rate of excretion, large amounts of the drug must be given to maintain appreciable plasma levels. This fact would raise the question of the advisability of the administration of the drug to individuals with kidney damage, and the possibility of a demonstration of toxic action in such cases should be recognized. The fate of para-aminobenzoic acid in the body has not been studied adequately, but observations in this laboratory [9] show that almost all of it is converted to para-aminohippuric acid, presumably by conjugation with aminoacetic acid in the liver, as in the case of ordinary benzoic acid. In addition, part of the para-aminohippuric acid formed is acetylated before excretion. Little of the drug is excreted as free or acetylated para-aminobenzoic acid. This, of course, suggests the possibility that the toxicity in cases of liver damage would be much greater than in patients with normal liver function. At the same time it suggests the possibility that when liver function is normal the burden that the kidneys must bear in excreting the end products of the metabolism of the drug is much less, owing to its conversion to para-aminohippuric acid, since this substance is very soluble and rapidly excreted by the kidneys both by glomerular filtration and by tubular excretion.[13] Recent studies show that there is normally little difficulty in excreting relatively high concentrations of this substance.[14]

It is not possible on the basis of these studies to evaluate the effects that the prior administration of a sulfonamide may have had on subsequent treatment with para-aminobenzoic acid, but experimental studies suggest that the sulfonamides are of no value and in fact may be detrimental. Although penicillin experimentally has been shown to be effective in certain rickettsial infections [2] there was no evidence that its simultaneous administration with para-aminobenzoic acid was helpful. However, the possibility should not be overlooked that it may be useful in preventing the complications sometimes associated with endemic typhus, especially in elderly patients.

SUMMARY

1. A series of 29 patients with endemic (murine) typhus were given 2 Gm. of para-aminobenzoic acid every two hours until their temperatures returned to normal.

2. The number of days of fever in patients receiving this treatment was, on the average, significantly less than in a comparable series of patients not receiving the drug.

3. No toxic effects that could be attributed to para-aminobenzoic acid were observed in a group of 46 patients, each of whom received an average of 95 Gm. of the drug. Twenty-nine of these patients had murine typhus.

4. It is recommended that a thorough clinical trial be made of this drug, using a larger number of patients under more rigidly controlled conditions. Such trials should include appropriate studies designed to detect any early toxic effects.

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ARTERIOVENOUS ANEURYSM FOLLOWING SURGICAL OPERATIONS

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Numerous reports concerning arteriovenous fistulas have appeared in the literature and for the most part have been concerned with those arising as a result of war wounds or from injuries incurred in civilian life, notably from bullet and stab wounds. It is not generally recognized that any trauma in which an artery and a vein are coincidentally injured may give rise to the condition. It is our purpose in this paper to call attention to the fact that this lesion may result from a surgical operation and to report an instance in which it followed a hysterectomy.

The first report of an arteriovenous fistula was made by William Hunter [1] in 1762. His 2 cases, which were classically described, followed injury of the brachial vessels as a result of bloodletting. The literature on the subject in the century following Hunter's communication contained many descriptions of similar cases not only in the brachial but in the temporal vessels, which was a familiar site for blood letting for the relief of headache, epilepsy, apoplexy, insanity and other lesions of the brain.[2] Although venesection is now rarely performed, we have seen 1 instance of aneurysm following

From the Department of Surgery, Emory University, and the Vascular Surgery Center, Ashford General Hospital, White Sulphur Springs, W. Va.

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2. Winslow, Nathan, and Edwards, Monte: Aneurysm of the Temporal Artery, Bull. School of Med., Univ. of Maryland **19**: 119 (April) 1935. Burns, A., cited by Winslow and Edwards. Busche, G., cited by Winslow and Edwards.

the routine withdrawal of blood with a needle from the brachial artery.

An incomplete review of the literature reveals a number of reports of this lesion following surgical procedures, including one between the inferior vena cava and the right common iliac artery following operation for a ruptured intervertebral disk.[3] Instances have been reported of intercostal arteriovenous fistula following thoracentesis,[4] of the facial vessels caused by application of a Roger Anderson splint,[5] of the anterior tibial vessels following introduction of a Steinmann pin [6] and of the superior thyroid artery following thyroidectomy.[7] Moreover, it has been seen in amputation stumps [8] and in the renal vessels following nephrectomy.[9] We have seen it in the posterior tibial vessels following application of a Steinmann pin and in the geniculate vessels following an operation for the removal of a semilunar cartilage.

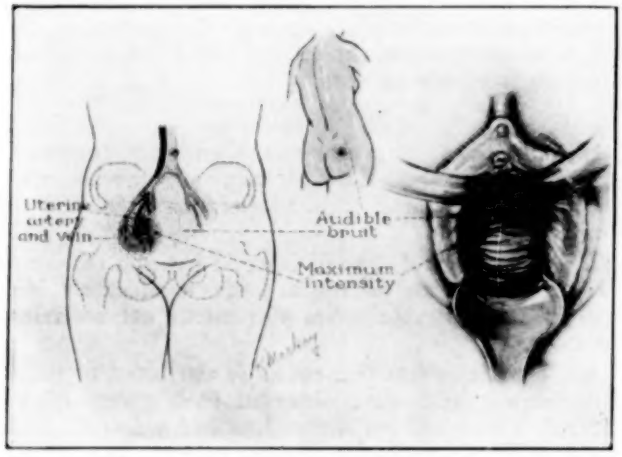

Fig. 1.—Points of maximum intensity of the bruit produced by an arteriovenous fistula of the right uterine vessels.

From this short review it is evident that any operation carries with it a possibility of producing the lesion. It is believed that the most likely explanation is the passage of a needle for the purpose of transfixion and ligation of vessels and that the needle thus passed injures an artery and vein at the same time, with the subsequent production of communication between them. Although transfixion and ligation of a vessel constitute a recognized standard procedure, it should be remembered that mass ligation of arteries and veins may very well give rise to this lesion. Particular care should be exercised to avoid the inclusion of more than one vessel in a transfixion suture. In addition, traction pins or wires and fixation devices for immobilization of bones should not be inserted near the known anatomic course of blood vessels.

The following case is reported because of its rarity, since we have not encountered a similar instance in the literature. It is believed that the fistula of the uterine vessels resulted from transfixion and mass ligation of the uterine artery and vein in the course of performing a hysterectomy.

REPORT OF CASE

A woman aged 31, the mother of 3 children, the last born Dec. 7, 1937, was operated on because of metrorrhagia, endocervicitis and the presence of uterine fibromyomas, a total abdominal hysterectomy being performed in January 1944. The operative note indicated that the procedure was carried out without difficulty and there was no excessive bleeding. The surgeon stated that it was his practice to transfix and ligate the uterine artery. Five months after the operation the patient noted the insidious onset of pain in the right lower quadrant of her abdomen, exaggerated by bladder distention. The pain was described as "dull" in nature and one which radiated into the vagina and the right iliosacral region. Because of this pain she consulted the surgeon who had performed the hysterectomy, and on vaginal examination he noticed the presence of a continuous thrill and a pulsation in the right upper part of the vagina. On further examination he was able to detect a thrill of less intensity in the right lower quadrant of the abdomen. On auscultation with a stethoscope there was a harsh continuous bruit in the vagina and over the right lower quadrant of the abdomen and the right buttock (fig. 1). A diagnosis of arteriovenous fistula of the uterine vessels was made, and the patient was referred to us for operation.

The findings that have been described were confirmed. The general examination was otherwise normal. There was no enlargement of the heart, and pressure in the right lower quadrant, which obliterated the thrill and bruit, did not affect the pulse rate. Intravenous pyelograms revealed normal kidneys and ureters except for the fact that the right ureter appeared somewhat irregular in its lower course, and its entrance into the bladder appeared more medial than normal.

Operation was performed under continuous spinal (procaine) anesthesia on Nov. 28, 1945. A catheter was placed in the right ureter prior to operation in order to define more clearly the course of the ureter. The midline scar was excised and the abdomen opened without difficulty. There were few adhesions. Both ovaries were normal. In the region of the right broad ligament just beneath the attachment of the round ligament to the vaginal vault a well defined thrill could be felt. It was obliterated by compression of the right common iliac artery. The peritoneum over the bifurcation of the right iliac artery was opened and a ligature was passed about the right hypogastric (internal iliac) artery as a safety precaution should severe hemorrhage be encountered. The right broad ligament was then opened and its two leaves were reflected from the vessels

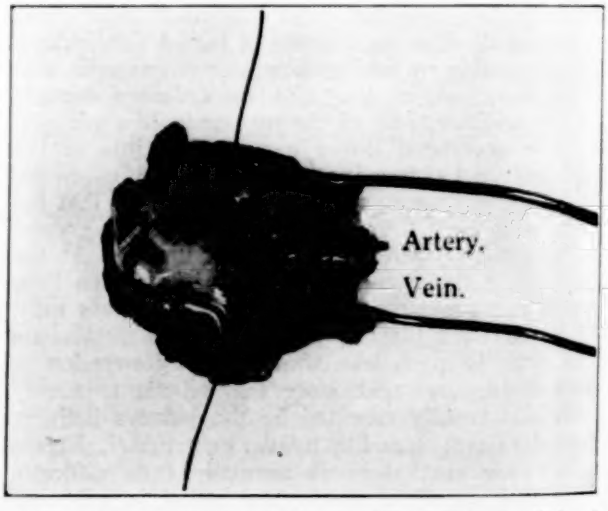

Fig. 2.—Artery and vein opened. A suture has been passed through the communication.

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9. Hollingsworth, E. W.: Arteriovenous Fistula of the Renal Vessels, Am. J. M. Sc. **188:** 399, 1934.

lying between them. The veins were greatly distended, one being at least 1 cm. in diameter. The uterine artery could be felt pulsating and enclosed in a mass of dilated tortuous venous channels. Compression of the artery caused obliteration of the thrill. The vessels were dissected free from one another and from the surrounding tissues until a pedicle was developed, the end of which was a stump of the uterine veessels. After this was done the uterine artery and vein proximal to the fistula were ligated and divided and the fistula was completely removed.

On examination of the specimen an opening between the artery and the vein was easily disclosed and a suture could be passed from artery and vein through this communication (fig. 2). The leaves of the broad ligament were closed and the suture previously placed about the hypogastric artery was removed and the peritoneum covering the vessels was closed. Following the operation the patient's pulse decreased from a preoperative level of 95 to an average level of 68. Her postoperative course was uneventful and she was discharged from the hospital on the fourteenth day after operation. All evidence of the thrill and bruit had disappeared, and three months after the operation she reported that there had been no recurrence of the abdominal pain.

SUMMARY

1. Arteriovenous fistulas following injury have been frequently reported, but it is not generally recognized that they may follow trauma of a surgical operation.

2. A case of arteriovenous aneurysm of the uterine vessels following hysterectomy was encountered, with subsequent operative removal and cure.

SALMONELLA TYPHIMURIUM FOOD INFECTION FROM COLBY CHEESE

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Prior to World War II cheddar and similar cheese were reported very rarely as a source of infection in disease. In 1923 Rich [1] reported an epidemic of typhoid traced to cheddar cheese which occurred in Michigan. In 1928 Wade [2] reported an outbreak of typhoid in Minnesota traced to a similar type of cheese. Other typhoid epidemics in which cheddar cheese was incriminated have been reported by Bowman,[3] Meyer,[4] Menzies [5] and Rice.[6] Although there are a number of outbreaks of food infection due to Salmonella typhimurium reported in the literature, none definitely traceable to cheese could be found.

Several investigators have carried on studies concerning the longevity of Eberthella typhosa in artificially infected cheese. Wade [2] was able to obtain viable Eberthella typhosa organisms from cheddar cheese for a period of thirty-four to thirty-six days when the cheese was held at 60 F. Campbell [7] found that Eberthella typhosa survived in artificially infected cheddar cheese for a period of three months when the cheese was held at 58 to 60 F. and for six to ten months when held at 40 to 42 F. Ranta [8] was able to obtain viable Eberthella typhosa organisms from cheddar cheese after twenty-eight days when the cheese was held at room temperature (68 F.). Gilman [9] recovered viable Brucella abortus organisms from artificially infected cheddar cheese for six months when held at 4.4 C.

No reference could be found in the literature concerning the longevity of Salmonella typhimurium in food except a report by McCleskey.[10] In his studies the organisms survived for one month in artificially infected quick frozen strawberries when held at a temperature of —18 C.

Our purpose in this report is to give a brief description of an outbreak of food infection caused by Salmonella typhimurium and traced to Colby cheese and to relate the results of bacteriologic studies made with the cheese. Colby cheese varies but little from cheddar cheese in its manufacture.

FEATURES OF THE OUTBREAK

Beginning on March 26, 1945 and extending over a period of one week 250 cases of food infection occurred among residents of six towns in three counties in West Tennessee. At about the same time 100 cases occurred in Lawrence County, Ill.,[11] and 34 cases in Fulton County, Ky.[12] The illness was characterized by a sudden onset with chills, fever with a temperature of 101 to 103 F., nausea, vomiting and diarrhea. The duration of the illness was from three to ten days, depending on the severity of the case. No deaths occurred. Salmonella typhimurium was isolated from the stool of 1 patient. An agglutination of the specific antigen with blood serum in a titer of 1:320 and over was found in a number of cases in which blood specimens were obtained.

A history of the food eaten revealed that all patients had eaten cheese twenty-four to forty-eight hours prior to the onset of illness. In many families histories were obtained of persons becoming ill after eating cheese, and those members of the families who did not eat cheese remaining well. Bacteriologic examination of a sample of the cheese resulted in the isolation of Salmonella typhimurium without difficulty.

Investigation of the manufacture of the cheese was made by the Food and Drug Administration [13] of the Federal Security Agency. As a result of this investigation it was found that a creamery in Illinois manufactured the cheese on March 12, 1945. It was learned that in the manufacture of the cheese a 10,000 pound capacity vat was half filled with milk, that later when the vat was to be completely filled the head cheesemaker found a mouse floating in the vat, fished it out, and completed the filling of the vat. As soon as the

From the Tennessee Department of Public Health.
Dr. Tucker is director of the Division of Preventable Diseases, Dr. Cameron is director of the Division of Laboratories, Miss Henderson is director of the Jackson Branch Laboratory and Dr. Beyer is director of the Weakley County Health Department.

Dr. P. L. Edwards of the Salmonella Center, University of Kentucky, confirmed the identification of the organisms. Members of the staff of the Division of Laboratories, Tennessee Department of Public Health, assisted.
Information concerning the manufacture of the cheese was furnished by the Food and Drug Administration, Federal Security Agency.

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11. Food Infection Outbreak Due to Cheese, Am. J. Pub. Health **35:** 883-884 (Aug.) 1945. Cross, R. C.: Personal communication to the author.
12. Blackerby, P. E.: Personal communication to the author.
13. St. Louis Office, Food and Drug Administration, Federal Security Agency: Personal communication to the author.

manufacture of the cheese in this vat was completed it was shipped to a packing company, where in turn a part of it was shipped to a grocery chain in Tennessee.

BACTERIOLOGIC STUDY

It was possible to obtain approximately 6 pounds of the cheese from one of the stores of the grocery chain for further bacteriologic study. Prior to the time the cheese was obtained from the store it had been kept by the groceryman in an electrical refrigeration unit at a temperature of approximately 50 F. It was carried from the store to the laboratory and placed in an electrical refrigeration unit and held at a temperature range of 43 to 48 F.

Isolations were made from the cheese at monthly intervals as described. The surface was removed from a small area of the cheese with a sterile scalpel. A portion of the cheese was taken aseptically from beneath this area and placed in a bottle containing selenite F liquid medium and macerated to increase the chances of securing the organism. After twenty-four hours' incubation at 37 C. transfers were made of several loopfuls of selenite F broth culture on S. S. agar plates and streaked. After twenty-four hours' incubation at 37 C., typical colonies were picked from these plates and transferred to Krumwiede's triple sugar agar slants. Where typical reactions were obtained in triple sugar after twenty-four hours' incubation at 37 C. the organisms were further identified by a study of sugar reactions with 1 per cent lactose, dextrose, mannitol, xylose, arabinose, inositol and rhamnose, and by tests for indole production in tryptone broth. Acid and gas were produced in dextrose, mannitol, xylose, arabinose, inositol and rhamnose. The organisms were motile and gram negative and were agglutinated with specific antiserum. Transplants of the organisms were sent to the Salmonella Center, University of Kentucky, Lexington, and identified as Salmonella typhimurium.

The last isolation made from the cheese was on Jan. 8, 1946. A culture from this isolation was also identified as Salmonella typhimurium at the Salmonella Center. Since the cheese was manufactured on March 12, 1945, Salmonella typhimurium remained viable in this cheese for a period of three hundred and two days, it being held at 43 to 48 F.

COMMENT

It has been noted that an epidemic of food infection resulted from the consumption of cheese contaminated with Salmonella typhimurium. Without a period of storage for curing, the cheese was sold on the market soon after manufacture. Sammis [14] states that where mechanical refrigeration is used cheese usually is aged at a temperature of 34 F., but where ice cooling is used the temperature is held usually at 40 to 45 F. Since this cheese was held at 43 to 48 F. during the bacteriologic study, it would appear that aging for a period of as long as forty-three weeks would not render it safe for consumption. From the experimental studies of Campbell [7] and Gilman [9] it is possible that Eberthella typhosa and Brucella abortus, as well as other pathogenic organisms, could survive in cheese as was found with Salmonella typhimurium in this instance.

Meyer [4] has stated that there is only one way to render cheese safe and that is by pasteurization. It is agreed that pasteurization of the milk and perhaps the curd in the process of cheese manufacture should be carried out. Besides the value of pasteurization of cheese from the health standpoint, it has been stated [14] that a better and more uniform quality of cheese can be made from properly pasteurized milk than from raw milk. In addition to proper pasteurization, it is believed that other sanitary measures should be strictly enforced in the manufacture of cheese. Pasteurization of the milk alone would not have prevented the occurrence of this outbreak.

14. Sammis, J. L.: Cheese Making, Madison, Wis., Cheese Maker Book Company, 1942.

SUMMARY

1. An epidemic of food infection occurred in West Tennessee, Illinois and Kentucky during March 1945.

2. The infected vehicle was found to be Colby cheese.

3. Salmonella typhimurium was isolated from the cheese without difficulty.

4. When held at 43 to 48 F., Salmonella typhimurium remained viable in the cheese for three hundred and two days.

FLUIDS IN CONGESTIVE HEART FAILURE

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Increased knowledge of water and electrolyte metabolism and a demonstration of the ill effects of clinical dehydration have revolutionized preoperative and postoperative therapy; [1] the treatment of kidney disease,[2] burns,[3] toxemias of pregnancy,[4] shock [5] and a variety of surgical and medical conditions.[6] Concomitantly, attention has been directed to fluid therapy in congestive heart failure with a resulting diversity of opinion as to the optimum therapy to be employed.

Currently most clinician restrict salt intake and limit fluids to 1,000 to 1,500 cc. daily as an integral part of their cardiac regimen.[7] Many are now permitting as liberal an intake as desired, while sodium is restricted to an absolute minimum; [8] still others advocate forcing

From the medical services of the Jersey City Medical Center.
Dr. Leevy is assistant medical resident, Dr. Strazza is medical resident and Dr. Jaffin is attending physician.

1. Coller, F. A., and Maddock, W. G.: Water and Electrolytic Balance, Surg., Gynec. & Obst. **70:** 340-354 (Feb.) 1940. Coller, F. A.; Campbell, K. N.; Vaughan, H. H.; Iob, L. Vivian, and Moyer, C. A.: Postoperative Salt Intolerance, Ann. Surg. **119:** 533-542 (April) 1944. Coller, Iob, Vaughan, Kalder and Moyer.[15]

2. Newburg, L. H., and Lashmet, F. H.: The Importance of Dealing Quantitatively with Water in the Study of Disease, Am. J. M. Sc. **186:** 461-471 (Oct.) 1933. Thorn, G. W.: Physiologic Considerations in the Treatment of Nephritis, New England J. Med. **229:** 33-48 (July 8) 1943. Bradley, S. E.: The Pathogenesis of Renal Insufficiency, ibid. **233:** 498-503 (Oct. 25), 530-534 (Nov. 1) 1945.

3. Fox, C. L.: Oral Sodium Lactate in Treatment of Burn Shock, J. A. M. A. **124:** 207-212 (Jan. 22) 1944. Moyer, C. A.; Coller, F. A.; Iob, V.; Vaughan, H. H., and Marty, D.: A Study of the Interrelationship of Salt Solutions, Serum and Defibrinated Blood in the Treatment of Severely Scalded, Anesthetized Dogs, Ann. Surg. **120:** 367-376 (Sept.) 1944. Berman, J. K.; Peterson, L., and Butler, J.: Treatment of Burn Shock with Continuous Hypodermoclysis of Physiological Saline Solution into Burned Area: Experimental Study, Surg., Gynec. & Obst. **78:** 337-345 (April) 1944.

4. de Alvarez, R. R.: The Use of the Neutral Diet and Hydration in the Treatment of Toxemias of Pregnancy, Am. J. Obst. & Gynec. **39:** 476-480 (March) 1940. Chesley, L. C., and Annitto, J. E.: A Study of Salt Restriction and of Fluid Intake in Prophylaxis Against Preeclampsia in Patients with Water Retention, ibid. **45:** 961-971 (June) 1943.

5. Winkler, A. W., and Hoff, H. E.: Potassium and the Cause of Death in Traumatic Shock, Am. J. Physiol. **139:** 686-692 (Sept.) 1943. Crossman, L. W., and Allen, F. M.: Shock and Refrigeration, J. A. M. A. **130:** 185-190 (Jan. 26) 1946.

6. Butler, A. M., and Talbot, N. B.: The Estimation of Losses Incident to Starvation and Dehydration with Acidosis or Alkalosis and Provision of Repair Therapy: II. Parenteral Fluid Therapy, New England J. Med. **231:** 621-628 (Nov. 2) 1944. Darrow, D. C.: Body Fluid Physiology: The Relation of Tissue Composition to Problems of Water and Electrolyte Balance, ibid. **233:** 91-97 (July 26) 1945.

7. Levine, S. A.: Clinical Heart Disease, ed. 3, Philadelphia, W. B. Saunders Company, 1945. White, P. D.: Heart Disease, ed. 3, New York, Macmillan Company, 1944.

8. Schroeder, H. A.: Studies on Congestive Heart Failure: Importance of Restriction of Salt as Compared to Water, Am. Heart J. **22:** 141-153 (Aug.) 1941. Proger, S.; Ginsberg, E., and Magendantz, H.: Effect of Ingestion of Excessive Amounts of Sodium Chloride and Water on Patients with Heart Disease, Am. Heart J. **23:** 555-556 (April) 1942.

fluids as a physiologically sound and frequently necessary measure in treating congestive failure.[9]

Those advocating fluid restriction attempt to allow the average intake advocated in health and feel that more than the allowed amount may increase the burden on the heart, produce generalized edema or retard its disappearance, act adversely with high venous pressure

TABLE 1.—*Previous Fluid Therapy*

Number of Patients	Amount, Daily
2	600 cc.
6	800 cc.
12	1,000 cc.
64	1,200 cc.

TABLE 2.—*Dietary Precautions* *

1. No salt, salt substitutes or soda to be used in cooking or at table
2. Obtain sweet butter or wash butter to remove salt; buy or bake unsalted bread or use Matzuths
3. No canned meat or fish; no cheese except cottage cheese
4. For gas or indigestion, use no sodium bicarbonate, alkali powders or tablets; avoid cabbage family, turnips, rutabagas, peppers, radishes, onions, spices, fried foods; may use calcium carbonate
5. For extra liquids use only well diluted plum, prune or cranberry juice

* From Schemm, footnote 9, first reference.

or low plasma protein, or produce water intoxication. Students of this school believe that release of edema water prevents any cellular dehydration which might result from restricting fluids.

Members of the "ad lib school" feel that limiting or forcing fluids without considering the individual patient may be difficult, hazardous and uncomfortable. With increased body losses 1,000 to 1,500 cc. of water may be inadequate. It is quite safe to administer water by mouth, the rate of absorption bearing in part an inversely proportional relation to venous pressure, and if there is an increased need or desire the intake of water should be increased.

Champions of forcing fluids base their rationale on newer physiologic concepts of the nature and pathogenesis of congestive heart failure. Emphasis is placed on the ever present renal functional impairment in cardiac decompensation. In acute decompensation it is felt that increased venous pressure leading to edema causes hemoconcentration and renal functional impairment;[10] in chronic or slowly developing decompensation it is postulated that decreased cardiac output leads to failure of the renal circulation with consequent impairment of kidney function and failure of salt excretion, resulting in increased capillary pressure and edema.[11] With decreased renal function, more water than normal is necessary to eliminate normal waste products; this water should be sufficient to allow excretion of waste materials without having the kidney work at its maximum capacity.

That increased water intake is both essential and practicable in cardiac decompensation has been demonstrated by Schemm,[9] who found severely edematous cardiac patients to have an associated dehydration. He obtained better results with forced fluids than restricted fluids (even in the face of high venous pressure, low plasma protein, pulmonary edema, convulsions and choked disks) and recommends in milder cases of edema giving 2,500 to 3,000 cc. of water daily, with dehydration 4,500 to 6,000 cc, and in some instances with large fluid loss 10,000 cc. daily.

In the Jersey City Medical Center all patients admitted to the general medical service with clinical congestive heart failure were assigned in rotation to one of three groups—restricted fluids, fluids ad libitum and forced fluids—to determine which type of therapy was best for routine use, and indications for each. All patients were given the same fundamental cardiac regimen, the only essential difference being the amount of fluid intake. Patients refusing to adhere to the more rigid restricted and forced fluid regimens were allowed to consume water as desired.

Excluded were patients moribund on admission with failure to respond to emergency cardiotherapy in forty-eight hours and patients with complicating coronary occlusion, pulmonary embolism, cerebral thrombosis, hemorrhage and embolism. Included were 49 patients with hypertensive heart disease, 35 with arteriosclerotic heart disease, 29 with rheumatic heart disease, 5 with syphilitic heart disease and 4 with cor pulmonale; 70 were men and 52 were women. Thirty-eight patients were admitted in their first period of decompensation; 84 had more than one period.

TABLE 3.—*Acid Ash Salt Poor Diet* *

A. Unrestricted Foods (from which at least two or three servings should be taken for any one meal)
   - Eggs—Two may be substituted for one meat serving
   - Meats—Any fresh meat, fish or chicken, one serving daily
   - Bread—Whole wheat bread without salt or raisins
   - Cereal—Puffed rice, puffed wheat, shredded wheat or any hot cereal cooked without salt
   - Macaroni, spaghetti, rice, corn cooked and served without salt or sauce.
   - Fruit—Prunes, plums, cranberries

B. Restricted Foods (from which no more than two servings should be taken at any meal)
   - Vegetables—Two small servings daily of any vegetable except parsnips, lima beans, rhubarb, chard and spinach, which are forbidden; use fresh or frozen vegetables or those canned without salt
   - Fruit—One serving of fruit or fruit juice daily except raisins and dates, which are forbidden
   - Milk and Milk Products—Two cups milk daily, one-quarter cup cream daily; unsalted cottage cheese substituted for meat

C. Soup—May combine allowed vegetables with mild allowance or with salt free broth
   - Desserts—Plain jello or pudding made from allowed eggs, milk, bread, corn starch, junket (no cake or cookies)
   - Beverages—One cup of coffee or tea at each meal
   - Neutral Foods (which may be taken in any quantity)—Sugar, butter, salad oil, clear sugar candies.

*From Schemm, footnote 9, first reference.

Of the patients with recurrent decompensation, all had been on digalen or a similar preparation, restricted fluids (table 1), ammonium chloride and a general salt poor diet.

Laboratory studies and clinical data included urinalyses, blood nonprotein nitrogen and sugar, blood counts, hematocrit and plasma protein by the Van Slyke copper sulfate method, plasma chlorides, urine chlorides, blood

9. Schemm, F. R.: High Fluid Intake in Management of Edema, Especially Cardiac Edema: Details and Basis of Regime, Ann. Int. Med. **17**: 952-969 (Dec.) 1942; High Fluid Intake in Management of Edema, Especially Cardiac Edema: Clinical Observations and Data, ibid. **21**: 937-976 (Dec.) 1944.

10. Fahr, George, and Ershler, Irving: Studies of the Factors Concerned in Edema Formation: (*a*) The Hydrostatic Pressure in the Capillaries During Edema Formation in Right Heart Failure, Ann. Int. Med. **15**: 798-810 (Nov.) 1941. Harrison, T. R.: Failure of the Circulation, ed. 2, Baltimore, Williams & Wilkins Company, 1939. Fishberg, A. M.: Heart Failure, ed. 2, Philadelphia, Lea & Febiger, 1940.

11. Warren, J. V., and Stead, E. A., Jr.: Fluid Dynamics in Congestive Failure: Interpretation of Mechanisms Producing Edema, Increased Plasma Volume and Elevated Venous Pressure in Certain Patients with Prolonged Congestive Failure, Arch. Int. Med. **73**: 138-147 (Feb.) 1944. Stead, E. A., Jr., and Warren, J. V.: Protein Content of Extracellular Fluid in Normal Subjects After Venous Congestion and in Patients with Cardiac Failure, Anoxemia and Fever, J. Clin. Investigation **23**: 283-287 (March) 1944. Seymore, W. B.; Pritchard, W. H.; Longley, L. P., and Hayman, J. M., Jr.: Cardiac Output, Blood and Interstitial Fluid Volumes, Total Circulating Serum Proteins, and Kidney Function During Cardiac Failure and After Improvement, ibid. **21**: 229-240 (March) 1942.

p_Hs on some patients, an electrocardiogram, venous pressure and circulation time, chest x-ray, daily weight before breakfast, twenty-four hour intakes and outputs, and daily physical evaluation.

The cardiac regimen consisted of bed rest, acid ash salt poor diet (table 3 and 3 A), digitalization, diuretics,

TABLE 4.—*Approximate Calculations for Acid-Base Content of Diet*

	Grams	Household Measure	Excess Acid	Excess Base
Vegetables	100	½ cup	....	6.2
Fruit	100	.....	....	5.1
Meat, fish and poultry	100	3½ oz.	10.5	...
Eggs	100	3	11.0	...
Cereal	180	⅔ cup	3.2	...
Bread	30	1 slice	2.0	...
Milk	240	1 cup	....	4.3
Cheese	30	1 in. cube	1.1	...
Potato	100	½ cup	....	7.0
Macaroni, noodles spaghetti, rice	150	¾ cup	3.1	...
Corn starch or tapioca	100	½ cup	....	1.5
Rice pudding	100	.....	....	1.3
Corn	...	.....	1.8	...

Plums, prunes and cranberries are excess acid.

vitamin supplements in some instances, sedation, cathartics and mechanical methods as necessary.

Patients were made ambulant as soon as feasible to obtain the maximum benefit of bed rest and at the same time avoid the evils of prolonged recumbency.[12] The average period of complete bed rest for all patients was twelve days.

Use of the acid ash salt poor diet[13] is predicated on its provision of sufficient calories, protein, minerals and vitamins and at the same time insuring a low sodium intake, low salt intake and an acid ash. The diet is high in protein, thereby tending to correct any protein deficiency; a low food sodium and salt intake prevents reaccumulation and hastens decrease of edema. An acid ash prevents neutralization of ingested acidifying diuretics and metabolic acids, which mobilize already stored sodium. Construction of the diet is dependent on the fact that milk, all vegetables and all fruits (except prunes, plums and cranberries) yield an excess alkaline ash; and meat, chicken, fish, eggs, wheat and corn products and bread yield an excess acid ash (table 4).

Blood p_H studies with the glass electrode have shown the acidifying property of this diet, and in several instances in our outpatient cardiac clinic simply switching of a patient from a general salt poor diet in which the ash is predominantly alkaline to the acid ash salt poor diet has caused disappearance of edema. This has led to the logical conclusion that all persons with clinical congestive heart failure should be placed on the acid ash salt poor diet, although with mild cardiac decompensation dietary control may not be necessary.

During the first part of this study digalen was used exclusively, and the first 22 patients of the series received it; later, because of its theoretical advantages, digitoxin was used. As demonstrated by others, digitoxin was found to be the preparation of choice for routine use because its purity allows complete absorption with little local irritation.[14] As with digalen, patients were digitalized with digitoxin by using divided dosage schemes unless an emergency existed. Most patients required 1.6 mg. for digitalization.

A variety of diuretics were used, each group of patients, however, having the same number employed. Ammonium chloride was used in 103 cases, diluted hydrochloric acid in 3, ammonium nitrate in 12, aminophylline in 83, urea in 12, mercupurin in 51, theobromine and sodium acetate in 6 and 50 per cent glucose in 15. Mercurials were used only when the degree of edema was a major source of discomfort and were prescribed after a course of ammonium chloride. Ammonium chloride was prescribed in doses of 6 to 9 Gm. daily for three days on and three days off to obtain maximum effects. Aminophylline and morphine with atropine were given when there was considerable dyspnea. Supplemental intramuscular thiamine hydrochloride was given in 18 cases in addition to other cardiotherapy because of clinical evidence of deficiency.

On admission, members of this series routinely received oxygen continuously until the clinical status warranted discontinuation. Pulmonary edema was treated with phlebotomies in 6 instances, ascites with paracenteses in 2 instances and hydrothorax with thoracenteses in 3 instances.

OBSERVATIONS

Restricted Fluids.—Thirty-six patients were observed on the restricted fluid regimen in which a maximum of 1,200 cc. of fluid was allowed daily (table 5). Significantly, 10 of these patients (27.7 per cent) complained of thirst during hot weather. Six (13.8 per cent) were sufficiently distressed to discontinue restricted fluids voluntarily, consuming 1,700 to 2,000 cc. of water daily during summer days.

That the customary policy of restricting fluids without regard to body needs in congestive heart failure frequently produces discomfort was demonstrated in this group. Of the 19 patients studied on restricted fluids during the summer, the 6 patients who switched to fluids ad libitum becase of thirst (31.5 per cent) were noted to have clinical evidence of dehydration: dry tongues, decreased tissue elasticity and oliguria associated with hemoconcentration. These findings were present although pulmonary congestion and/or peripheral edema existed. Increased fluid intake made the patients comfortable and caused signs of dehydration to disappear while compensation was restored.

TABLE 5.—*Restricted Fluids*

	Winter		Summer	
	Adhering	Not Adhering	Adhering	Not Adhering
Hypertensive	7	0	6	3
Arteriosclerotic	6	0	5	2
Rheumatic	4	0	2	1

Review of previous experiences with fluid restriction shows several instances of limiting fluid to 1,000 to 1,200 cc. daily on admission and, with failure to mobilize

12. Levine, S. A.: Some Harmful Effects of Recumbency in Treatment of Heart Disease, J. A. M. A. **126:** 80-84 (Sept. 9) 1944. Dock, W.: Evil Sequelae of Complete Bed Rest, ibid. **125:** 1083-1087 (Aug. 19) 1944.

13. Salt content and total composition of the acid ash salt poor diet:

Sodium chloride	1.915 Gm.
Protein	72.1
Fat	64.6
Carbohydrate	205.3
Calories	1,707
Vitamin A	5,040
Thiamine	1.47
Riboflavin	1.786
Niacin	16.07
Ascorbic acid	31

14. Gold, H.; Cattell, M. K.; Modell, W.; Knitt, N. T.; Kramer, M. L., and Zabim, W.: Clinical Studies on Digitoxin (Digitaline Nativelle) with Its Use in Single Average Full Doses: Method of Digitalization, J. Pharmacol. & Exper. Therap. **82:** 187-195 (Oct.) 1944. Katz, L. N., and Wise, W.: Oral Single Dose Digitalization with Digitalis Leaf and Digitaline "Nativelle," Am. Heart J. **30:** 125-133 (Aug.) 1945.

edema with bed rest, digitalis, ammonium chloride and mercurials, further restriction to 600 to 800 cc. daily. In some instances this resulted in dehydration and disorientation.

Intracellular dehydration as a complication of restricted fluids with vigorous employment of diuretics constitutes a real hazard to life, as demonstrated by the following case study:

C. K., a man aged 69, a retired laborer, was admitted to the hospital on Aug. 15, 1945 in his first period of decompensation incident to arteriosclerotic heart disease. On admission he was somewhat cyanotic, dyspneic at bed rest and on examination was found to have 4 plus ankle edema, hepatomegaly and pulmonary congestion. Urinalysis, blood chemistry, plasma proteins and blood chlorides were within normal limits. The venous pressure was 200 mm. of water and the circulation time 20 seconds arm to tongue and 12 seconds arm to lung.

The patient was placed on bed rest in Fowler's position, sedated, digitalized with digalen and given ammonium chloride 30 grains (2 Gm.) three times daily for three days, then 2 cc. of mercupurin intravenously. On a restricted fluid regimen he consumed between 800 and 1,200 cc. daily, and considerable regression of ankle edema and pulmonary congestion was noted. Profuse diaphoresis, attributed to hot weather, was present.

TABLE 6.—*Fluids Ad Libitum*

I. Complicated	13	II. Uncomplicated	35
Pneumonia	10	Summer	16
Hypertensive	4	Hypertensive	6
Arteriosclerotic	1	Arteriosclerotic	4
Rheumatic	5	Rheumatic	4
		Syphilitic	1
		Cor pulmonale	1
Diabetes	2	Winter	19
Hypertensive	1	Hypertensive	6
Arteriosclerotic	1	Arteriosclerotic	4
		Rheumatic	4
		Syphilitic	3
		Cor pulmonale	2
Thrombophlebitis	1		
Rheumatic	1		

On his seventh hospital day, with the initiation of his second period of ammonium chloride, the patient was disoriented as to time and place. Examination revealed appreciable dryness of his mucous membranes, with sunken eyes. An oliguria was present, the blood nonprotein nitrogen had risen to 48.4 mg. per hundred cubic centimeters and the rectal temperature was 101 F.

The patient was switched to a forced fluid regimen and within four days dehydration was absent, sensorium was regained, and the patient was both asymptomatic and compensated.

The rapid clearing of the sensorium following forcing fluids, with a correction of evidences of dehydration, indicated the relationship of these two phenomena. Four patients admitted with recurrent decompensation incident to infections were observed to be unusually lethargic and confused. The history revealed an attempt to adhere to restricted fluids at home in spite of febrility: examination showed clinical dehydration in spite of edema (pulmonary and peripheral). It is felt that the increased fluid intake allowed these patients was responsible for improving their mental status and allowed successful treatment of their sepsis and heart failure.

FLUIDS AD LIBITUM

Forty-eight patients were observed on a fluid ad libitum regimen, 16 during the summer, 19 during the winter, 10 with pneumonia, 2 with diabetes and 1 with thrombophlebitis (table 6).

Breakdown of the patients of the fluid ad libitum group according to season and complications shows clearly that concepts requiring fluid limitation in the cardiac patient are unjustifiable (table 7).

It is shown that the average cardiac patient in the summer during hot weather will consume approximately 1,700 cc. of water daily and may consume as much as 2,700 cc. in response to thirst, whereas in the winter

TABLE 7.—*Intake Observations, Fluids Ad Libitum*

Summer Months	
Highest average ind. intake	2,700 cc.
Lowest average ind. intake	1,400 cc.
General average ind. intake	1,700 cc.
Winter Months	
Highest average ind. intake	2,100 cc.
Lowest average ind. intake	1,100 cc.
General average ind. intake	1,300 cc.
Pneumonia Complicating	
Highest average ind. intake	3,100 cc.
Lowest average ind. intake	1,700 cc.
General average ind. intake	2,200 cc.

only 1,300 cc. is consumed daily. When there was a complicating pneumonia the average intake was raised to 2,200 cc. daily. Diabetic cardiac patients uncontrolled by insulin and diet consumed 500 cc. more daily than other cardiac patients. After control there was no difference in intake between diabetic patients and other cardiac patients.

Patients allowed to drink water as they desired were much more comfortable than members of the other groups. With daily consumption regulated by thirst, intake was more physiologic. In no instance was increased intake associated with evidences of overburdening the circulation, increased evidences of decompensation or water intoxication.

Forced Fluids.—Thirty-eight patients were observed on a forced fluid regimen with a minimum daily intake of 3,000 cc. Seven of these (18.3 per cent) were nauseated by forced fluids, necessitating discontinuance of this regimen (table 8).

TABLE 8.—*Forced Fluids*

	Adhering	Not Adhering	Total
Hypertensive	13	3	16
A. Uncomplicated	10	3	13
B. With pneumonia	1	0	1
C. With azotemia	2	0	2
Arteriosclerotic	10	2	12
A. Uncomplicated	7	2	9
B. With pneumonia	1	0	1
C. With pyelitis	1	0	1
D. With diabetes	1	0	1
Rheumatic	6	2	8
A. Uncomplicated	4	1	5
B. With pneumonia	2	1	3
Syphilitic			
A. Uncomplicated	1	..	1
Cor pulmonale			
A. Uncomplicated	1	..	1

In this group were 5 patients with infections and 1 with pyelonephritis with penicillin plus sulfadiazine, where forced fluid was indicated. Two patients with azotemia incident to nephritis and congestive heart failure were treated with forced fluids with gratifying results. The following case history is illustrative:

E. N., a man aged 34, a fireman, was admitted to the hospital on Dec. 7, 1945 to the medical service with a chief complaint of puffy eyes and shortness of breath. He had been well until

three weeks prior to admission, at which time he first noted that his eyes became swollen and that there was a gradual onset of exertional dyspnea. At the time of admission the patient was acutely ill and orthopneic, exhibiting periorbital edema, pulmonary congestion and enlarged heart with the blood pressure 160/100. Urinalysis revealed 3 plus albuminuria, specific gravity 1.018, 80 red blood cells per high power field and granular and cellular casts. The nonprotein nitrogen was 98, blood urea 54 and blood creatinine 3.4 mg. per hundred cubic centimeters. The circulation time was 38 seconds arm to tongue and 15 seconds arm to lung; the venous pressure was 270 mm. of water. Plasma proteins, blood sugar and blood count were essentially normal.

The patient was placed at complete bed rest, given an acid ash salt free diet and digitalized; fluids were forced. With intravenous supplements he consumed an average of 3,500 cc. of water daily, excreting an average of 2,700 cc. There was a weight loss of 6 pounds (2.7 Kg.) with a drop of nonprotein nitrogen from 98 to 30 in fourteen days. At this time the patient's circulatory studies were normal, dyspnea was absent and a comparison of chest x-rays showed complete clearing of pulmonary congestion. He was then allowed to drink water as desired and at this time is asymptomatic.

This is an adequate demonstration that, when renal dysfunction makes forcing fluids necessary, cardiac decompensation is no contraindication. When actual uremia is present on the basis of chronic nephritis, dehydration and associated acidosis are therefore to be treated in spite of heart failure, its presence not preventing indicated physiologic therapy.

In no instance was there noted pulmonary edema or hypertensive encephalopathy incident to cerebral edema in patients following forced fluids. That forcing fluids will cause discomfort to a considerable proportion of patients became evident. Four patients stated that they "felt full" following the ingestion of such large quantities of water; 7 had discomfort to the point of nausea. In the latter group, forced fluids was discontinued and on fluids ad libitum all the patients did well.

That forcing fluids may actually facilitate disappearance of edema is illustrated by the following case:

J. F., a man aged 56, a clerk, readmitted to the Medical Center on July 24, 1945 for recurrent decompensation not controlled in the cardiac clinic, had been first seen in the hospital during his initial period of congestive heart failure one year previously. At the time of his first admission he was given restricted fluids and routine cardiotherapy.

At the time of his second admission his blood pressure was 200/140, his heart considerably enlarged, with hypertensive configuration, auricular fibrillation and bundle branch block. There was 4 plus ankle edema, pulmonary congestion, and the liver was enlarged 4 fingerbreadths below the lowest right costal margin in the midclavicular line. The venous pressure was 205 mm. of water; the circulation time of arm to tongue was 30 seconds, of arm to lung 17 seconds.

The patient was placed on a forced fluid regimen, but because of previously placed emphasis on the necessity for restricting fluid he refused to drink large amounts of water lest he injure himself. With the routine cardiac program including ammonium chloride and mercupurin, there was a failure to mobilize edema after ten days' hospitalization. Hot weather and the drying of the mucous membranes with encouragement to force fluids increased his intake from 1,300-1,500 cc. daily to 3,800-4,200 cc. daily. Synchronous with increased intake, edema fluid was mobilized rapidly. With forced fluids, total salt excretion was increased.

After discharge the patient continued to consume 12 to 14 glasses of water daily during the hot weather. He has remained compensated.

Of the group adhering to forced fluids, 27 felt greatly improved. The highest oral intake per day, consumed by a hypertensive patient admitted with pulmonary edema and anasarca, was 7,600 cc., with an average output of 5,750 cc. After 5 patients had been treated on forced fluids with intravenous supplements to obtain the desired intake, intravenous fluids were discontinued as a routine procedure because of time consumption and discomfort to the patient. None of the patients receiving forced fluids by vein demonstrated any deleterious effects.

Ability to compensate in heart failure is generally independent of fluid intake. Restriction of fluids will not aid compensation; forcing fluids will not prevent compensation. Four patients were studied on the different fluid regimens, two of whom had been readmitted because of discontinuance of digitalis. From individual and total group studies the amount of fluid intake had no apparent effect on respiratory rate, pulse or heart rate, cardiac size, the electrocardiogram, circulation time or venous pressures. Illustrative is a patient with chronic decompensation failing to respond to any type of therapy:

L. L., a man aged 55, a butcher, was first seen in the Jersey City Medical Center in March 1945 with generalized anasarca, dyspnea and Cheyne-Stokes respirations incident to hypertensive heart disease with decompensation. During one month's hospitalization evidences of heart failure cleared considerably, but pulmonary congestion, hepatomegaly and ankle edema persisted. He was followed in the outpatient cardiac clinic, where he did poorly and had to be rehospitalized in July 1945.

Until his second hospitalization the patient had been on rigid fluid restriction, and to satisfy his thirst he found it necessary to "cheat." On rehospitalization he restricted himself to 1,000 cc. daily without response. Switching to a forced fluid regimen of 3,200 cc. daily produced no change in his state of compensation, the edema and weight, which had temporarily increased, being unchanged. On fluids ad libitum, evidence of chronic decompensation, with increased venous pressure and circulation time, pulmonary congestion, hepatomegaly and peripheral edema persists to date.

There was no observable difference in the period required for compensation in the three groups of patients studied, the average for each group being ten days. The etiologic and anatomic background had a definite effect on the individual time required for compensation but was insignificant in overall group comparisons. We were unable to compensate 3 patients in this series, 2 of whom were exposed to all the different fluid regimens without response, 1 on restricted fluids refusing to increase her intake. All these patients are still alive but have evidence of chronic decompensation.

No effect of fluid intake on the mortality rate was seen. Excluding patients dying in forty-eight hours after admission and of complicating coronary occlusions or cerebrovascular accidents, of the 122 patients studied there were three deaths during the course of therapy, 1 patient not responding to any fluid regimen, 1 on restricted fluids and 1 on fluids ad libitum. Careful selection of patients made this low mortality rate possible. The general prognosis of the individual patient studied has not been altered.

COMMENT

Previous to the conduct of these clinical experiments in our medical service, patients with congestive heart failure with some exceptions routinely received restricted fluids (1,200 cc. daily). Following an evaluation of our study we have allowed all cardiac patients to consume water as they desire unless there is some definite reason for forcing fluids. The results are felt to be vastly superior with fluid ad libitum, for the patients are much

more comfortable physically and are improved psychologically. Furthermore, the tendency on the part of the physician and the patient to reduce fluid intake gradually to almost nil when there is failure of response to the usual cardiac regimen has been discarded. This has resulted in placing of the proper emphasis on bed rest, digitalis, diuretics and diet.

While it would be optimum for the comfort of the individual patient not to restrict salt or water in heart failure, in most instances this is not feasible. The hydropigenic action of salt makes it necessary to reduce its consumption; such a reduction incorporated in the acid ash salt poor diet is best for the reasons given. With reduced salt intake and normal water consumption one need not fear electrolyte deficiency as there will be a self-imposed economy of salt as in the normal person.[15]

This study emphasizes the effectiveness of water as a diuretic. Studies of blood and urine chlorides in this series indicated that any excess of salt was usually lost with increased fluid intake. After the extra alkali is mobilized, allowing disappearance of edema, in spite of continued ingestion of large quantities of water no clinical or laboratory evidence of salt depletion occurred. This is due to regulatory mechanisms of the kidney and sweat glands which preserve electrolytic balance, excreting extra water or salts and retaining them when depletion is threatened.[16]

That cardiac patients as well as others are susceptible to sodium chloride depletion in preoperative and postoperative periods and heat exhaustion states must be realized. Administration of ammonium chloride as a diuretic and body sodium chloride economy[17] makes this condition infrequent. We have treated surgical cardiac patients on the usual regimen preoperatively and adhered to Coller's proposed routine (withholding all saline during the first three postoperative days and providing necessary water as 5 per cent glucose in distilled water). In no instance has sodium chloride depletion become evident necessitating administration of saline. In the cardiac patient more so than in any other surgical patient, saline should be used with extreme caution and, if indicated, prescribed as a hypotonic solution.[18]

Without nausea or vomiting, oral administration of water in congestive heart failure is more feasible because of its physiologic safety as cited by advocants of fluids ad libitum. Also there is a reduction of serum electrolyte following the ingestion of a large volume of water referable as much to passage of salt into the intestinal tract as to absorption of water.[15] With decreased renal excretion of salt in decompensation this exchange is theoretically valuable in restoring water and electrolytic balance.

The fact that the volume increase of interstitial fluid (edema) is subject to the same vicissitudes as normal interstitial fluid is basic to an understanding of the rationale of allowing liberal fluid intakes in congestive failure. When dehydration results from inadequate water intake the deficiency of water is felt in all parts of the body, within the cells as well as in the extracellular spaces. The initial defense of the organism in the presence of a process of dehydration is directed toward support of the volume of the blood plasma and protection of the volume of the intracellular fluid. Later, both interstitial and plasma water decrease, leaving the cardiac patient brine logged.

With advancing dehydration about one half of the expenditure of extracellular water is replaced by water from the cells. This cellular water is made of water released by consumption of protoplasm, water transferred under the osmotic effect of the increase in extracellular ionic concentration, and by excretion of intracellular potassium.[19] The intracellular dehydration leads to irreversible degenerative changes and abnormal function.

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16. Peters,[15] Conn and Johnson.[17] Gamble.[19]
17. Conn, J. W., and Johnston, Margaret W.: The Function of the Sweat Glands in the Economy of NaCl Under Conditions of Hard Work in a Tropical Climate, J. Clin. Investigation **23**: 933 (Nov.) 1944.
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SUMMARY

1. A study of 122 patients with congestive heart failure was conducted specifically to evaluate the relative merits of restricting fluids, allowing fluids ad libitum and forcing fluids.

2. Of 36 patients observed on restricted fluids, 27.7 per cent complained of thirst (52.6 per cent of those observed during the summer); 13.6 per cent of patients discontinued restriction because of thirst. Restricted fluids may lead to dehydration with disorientation.

3. On fluids ad libitum the average cardiac patient consumed approximately 1,700 cc. daily during the summer, 1,300 cc. daily during the winter and 2,200 cc. daily with febrility, without ill effects in any instance. Patients on fluids ad libitum were much more comfortable than members of the other groups studied.

4. Of 38 patients observed on forced fluids, 18.3 per cent were nauseated, necessitating discontinuance. Of 31 adhering to the regimen the results were good.

5. In general, compensability is independent of fluid therapy. No effect of fluid therapy on mortality was noted.

6. Digitoxin or a similar pure glucoside is the preparation of choice for routine digitalization. The acid ash salt poor diet is the diet of choice in treating congestive heart failure.

CONCLUSIONS

1. Essential therapy in congestive heart failure is the judicious employment of bed rest, digitalis, diuretics and sedatives, with an acid ash salt poor diet providing sufficient calories, minerals and vitamins.

2. With restricted sodium intake, restriction of water is unnecessary in treating cardiac decompensation, increases the discomfort of the patient and may prove deleterious.

3. In most decompensated cardiac patients forcing fluids will neither retard nor facilitate compensation. When congestive failure is complicated by sepsis requiring chemotherapy, azotemia or dehydration in associated medical or surgical conditions, fluids should be forced to obtain optimum therapeutic results.

4. As in health, the average patient with congestive heart failure should be allowed to drink water as it is desired, consuming enough to maintain a daily minimum urinary output. Water intake should be increased to prevent dehydration where there is intrinsically impaired renal function, sepsis, excessive skin or urinary water loss.

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Clinical Notes, Suggestions and New Instruments

PRIMARY TULAREMIC PNEUMONIA TREATED WITH STREPTOMYCIN

RICHARD B. COHEN, M.D., and RICHARD LASSER, M.D.
Brooklyn

We are reporting a case of primary tularemic pneumonia with recovery in the hope that it may contribute to the evaluation of the therapy of the disease.

REPORT OF CASE

History.—C. G., a Negro aged 33, a stevedore, was admitted to the Jewish Hospital of Brooklyn on Nov. 27, 1945 with chief complaints of cough, fever and headache of twelve days' duration. The onset of symptoms was sudden with a shaking chill, fever and generalized malaise. The fever persisted at a high level, and after three days a cough developed productive of thick white sputum. There was no dyspnea, orthopnea or chest pain. The patient was placed on a sulfonamide for two days and received penicillin both orally and intramuscularly for ten days prior to admission with no apparent effect.

The past history was noncontributory. The patient had a gastroenterostomy for a gastric ulcer five years previously and had been on an ulcer diet since that time. There had been no gastric complaints during the previous year, and no serious illnesses.

Fig. 1.—Infiltration of the right lung field on the twenty-eighth hospital day.

Fig. 2.—Clearing of the right lung field on the eighty-first hospital day.

Systemic review gave negative results.

Physical Examination.—The patient appeared acutely ill and was apathetic and feverish but cooperated well during the history and physical examination. Relevant findings were limited to the following:

Examination of the chest revealed dulness to flatness, bronchial breathing, decreased breath sounds and tactile fremitus and increased whispered pectoriloquy heard over the lower right chest posteriorly. There were medium moist rales over the affected area.

The heart showed regular sinus rhythm and tachycardia. The sounds were of fair quality, with no murmurs. The second pulmonic equaled the second aortic sound.

The abdomen was distended, with no masses or organs felt.

Laboratory Examination.—Hemoglobin was 94 per cent, red blood cells numbered 4.59 million, wihte blood cells 9,600, polymorphonuclears 67, bands 10, lymphocytes 17 and mononuclears 6. The sedimentation rate was 48 mm. per hour. The Kline reaction was negative. Urinalyses were negative. Sputum and blood cultures were negative for acid fast or other organisms. A pleural tap was performed with 500 cc. of dark yellow fluid obtained, nonpurulent, and sterile to culture and smear. X-ray examination revealed an irregular opacity occupying the lower half of the right lung field suggestive of infiltration. There was fluid present (fig. 1).

Course.—The patient was placed on 800,000 units of penicillin intramuscularly and intravenously daily, and sulfadiazine 1 Gm. every four hours. Intravenous glucose and saline solution and 1,000 cc. of Amigen were given daily. Despite this therapy the patient's temperature maintained a steady level of 104-105 F. His breathing became progressively more difficult and rapid, and he was placed in an oxygen tent. At this time he was irrational and incontinent of urine and feces. There was a constant dry hacking cough and occasionally pink stained sputum would be expectorated in small quantities. On December 6 there was a tarry stool with a 4+ guaiac reaction. A transfusion of whole citrated blood was given. Repeated thoracenteses gave sterile cultures, as did the blood and sputum.

At this time it was generally thought that the pathologic process was that of an atypical pneumonia of virus causation. It was decided that agglutinations for tularemia and plague be done because of the severity of the patient's course. The nature of his occupation as a stevedore might bring him into contact with infected material or rodents, and tularemia particularly was not likely to be cultured on ordinary mediums.

First agglutinations for tularemia were obtained in dilutions of 1:160 on the twelfth hospital day and the twenty-fourth day of illness. The titer gradually rose to 1:1,280 on the thirty-seventh day of illness and twenty-fifth day of hospitalization.

Careful questioning of the patient's family disclosed that about three days before the onset of the present illness he had gone rabbit hunting on Long Island and had killed a rabbit but did not skin it or eat it. Careful questioning and examination of the body and extremities gave no evidence of the presence of an initial cutaneous lesion.

Streptomycin therapy was instituted. After 1,000,000 units of the drug and in forty-eight hours definite improvement was observed. His temperature dropped from levels of 104 F. to levels ranging between 99 and 100 F. by rectum. Subjectively the patient was improved. He became rational and continent and his temperature remained down. He received a total of 7,062,000 units of streptomycin intramuscularly and intravenously over a period of ten days, during which period his temperature remained down and he was subjectively improved.

His x-rays have shown pronounced clearing. However, on discharge they still showed signs of infiltration at the right base. About one week after the withdrawal of streptomycin the patient began to have an erratic low grade fever occasionally rising to 101 F., which remained for two weeks and then returned to normal. Subjectively he remained well and continued to improve steadily until discharge.

No positive cultures for Pasteurella tularensis were obtained. Pleural fluid was innoculated intraperitoneally into a guinea pig, which died in one week but was not examined post mortem because the laboratories were not equipped to handle the organism and titers of 1:1,280 were considered diagnostic.

The patient was hospitalized eighty-five days.

COMMENT ON THE COURSE

This is a case of primary tularemic pneumonia, which until agglutinations were obtained was thought to be a primary atypical pneumonia of virus etiology. The positive agglutination of 1:160 was not obtained until the twenty-fourth day of illness. At this time the patient was considered to be moribund. Following intramuscular and intravenous administration of 1,000,000 units of streptomycin, and in forty-eight hours, there was a drop in temperature from levels of 104-105 F. to levels of 99-100 F. The patient became rational and continent, with definite subjective improvement. Since no other specific therapy was being given at the time and since this form of tularemia

Charles Pfizer & Co., Brooklyn, provided the streptomycin used in this case.

From the medical service of Dr. Joseph Rosenthal, the Jewish Hospital of Brooklyn.

is not prone to resolve by crisis or rapid lysis, we feel that we can attribute the dramatic change to the streptomycin. A total of 7,062,000 units of the drug was administered over a period of ten days.

We attribute the slow resolution of the pulmonary exudate to the fact that treatment was not begun until the twenty-fourth day of the illness, thus allowing the pulmonary pathologic condition to become far advanced. We feel that the low grade fever one week after the withdrawal of streptomycin may have been caused by concomitant absorption of pulmonary exudate. As far as can be determined, no clinical relapse was present at any time in his latter course.

GENERAL COMMENT

We believe this case to be one of primary pneumonic tularemia because the initial and only pathologic change was confined to the lungs. Whether the lung parenchyma was reached by aspiration of bacilli, as believed by Reimann,[1] or merely was one aspect of a general septicemia [2] could not be determined. There were, however, no primary foci or regional lymphadenopathy at any time. Pneumonic tularemia is attended with a mortality of from 30 to 60 per cent as reported by various observers.[3] This is contrasted with the overall mortality of uncomplicated tularemia of 5 to 10 per cent.[4] Pullen [5] recently reported 21 cases of tularemia complicated with pneumonia, of which 8 cases were comparable with ours. Of these 8, 6 were fatal. The seriousness of this form of tularemia is thus evident.

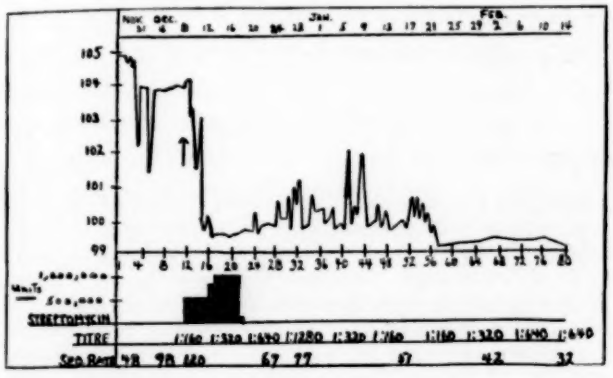

Fig. 3.—Correlation of the temperature, streptomycin therapy and agglutination titers and sedimentation rates.

The therapy of tularemia until recently has consisted solely in the use of supportive measures. Penicillin [6] and sulfonamide drugs have been ineffective and proved so in this case too. Hyperimmune goat serum has been of limited value. Jackson [7] recently reported 61 cases of "all types" of tularemia treated with a 2 per cent aqueous solution of bismuth sodium tartrate intravenously without a death.

Foshay [8] reported the first 7 cases of human tularemia treated with streptomycin. These were all of the ulceroglandular type. All showed prompt subjective improvement, control of the buboes and remission of temperature.

Experimentally, Pasteurella tularensis has been shown to be sensitive to streptomycin in vivo and in vitro by Heilman.[9] A concentration of 0.1 to 0.3 unit per cubic centimeter sufficed to exert a bacteriostatic effect on various strains of the organisms. Protection of mice against lethal doses of the tularense organism were also conclusive. This work suggests that the dosage of streptomycin should be about 1 to 2 million units per day to attain levels of 1 to 3 units per cubic centimeter of serum.

SUMMARY

A case of primary pneumonic tularemia was apparently cured. In ten days 7,062,000 units of streptomycin was given, with clinical improvement and fall in temperature from 104 to 100 F. in forty-eight hours. Penicillin and sulfonamides were ineffective.

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8. Foshay, L., and Pasternack, A. B.: Streptomycin Treatment of Tularemia, J. A. M. A. **130**: 393 (Feb. 16) 1946.
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Committee on American Health Resorts

The Committee on American Health Resorts has authorized publication of the following statement on the acceptance of the Saratoga Spa, Saratoga Springs, N. Y. A copy of the rules on which the Committee bases its action will be sent on request.

W. W. BAUER, M.D.

SARATOGA SPA, SARATOGA SPRINGS, N. Y., ACCEPTABLE FOR LISTING BY COMMITTEE ON AMERICAN HEALTH RESORTS

The Saratoga Spa, Saratoga Springs, N. Y., applied for listing by the Committee on American Health Resorts of the American Medical Association. The Committee has been furnished with all the information required under its rules, including copies of advertising and promotional material, and a report on an inspection by a Committee representative. The submitted information and the report indicate that the institution is operated in accordance with the rules of the Committee. The distribution of advertising material not in accordance with these rules has been discontinued.

The Committee on American Health Resorts is satisfied that the Saratoga Spa is being operated in accordance with the rules of the Committee and has placed this institution on the list of American health resorts complying with the Committee rules for a period of one year beginning May 1, 1946. This listing may be continued for three year periods if the listed institution continues to comply with the rules.

Council on Foods and Nutrition

ACCEPTED FOODS

The following additional foods have been accepted as conforming to the Rules of the Council on Foods and Nutrition of the American Medical Association for admission to Accepted Foods.

JAMES R. WILSON, M.D., *Secretary.*

PREPARATIONS USED IN THE FEEDING OF INFANTS (*See* Accepted Foods, 1939, p. 156)

H. J. Heinz Company, Pittsburgh.

HEINZ PRE-COOKED OATMEAL is composed of toasted oat flakes, nonfat milk solids, brown sugar, fine dairy salt, dicalcium phosphate, calcium carbonate, sodium ferric pyrophosphate, nicotinic acid, thiamine hydrochloride and riboflavin.

Analysis (submitted by manufacturer).—Total solids 94.0%, ash 6.00%, fat (by acid hydrolysis) 5.46%, protein (N × 6.25) 16.80%, crude fiber 1.89%, total carbohydrates other than crude fiber (by difference) 63.9%, total sugar as sucrose 9.26%, salt 1.58%.

Calories.—3.73 per gram, 105 per ounce.

Vitamins and Minerals.—	Per Hundred Grams
Thiamine	1.225 mg.
Riboflavin	0.884 mg.
Niacin	22.8 mg.
Pantothenic acid	0.885 mg.
Calcium	1,040.00 mg.
Phosphorus	780.00 mg.
Iron	37.00 mg.
Copper	0.85 mg.

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SATURDAY, AUGUST 3, 1946

INDICTMENT OF OPTICAL FIRMS AND OPHTHALMOLOGISTS UNDER SHERMAN ACT

Elsewhere in this issue (page 1138) appears a condensation of two complaints filed by the United States through the Department of Justice charging optical wholesalers and ophthalmologists with violating the Sherman Act by fixing prices on spectacles through rebating to the ophthalmologists approximately one half of the total price paid by their patients for eyeglasses. The Department of Justice adopted the unusual device of selecting certain physicians as representative of the entire class of physicians securing rebates as defendants in the suit. Attorney General Tom C. Clark said in connection with the filing of the suits that "the department is informed that the rebating practice is industry wide and it is presently expediting its investigation of all wholesale dispensers in the optical field. If investigation discloses similar practices, additional suits will be filed as quickly as possible." The newspaper release made by the Department of Justice states that some individual physicians receive as much as $40,000 annually in rebates. The actual figures cited in the complaint indicate instances in which a Chicago patient was charged $14 for lenses, the optician receiving $2.50 and the physician $11.50; an instance in which a patient paid $25 for lenses, the company receiving $10.80 and the physician $14.20. A Dallas patient paid $21 for lenses, which was divided approximately equally between the optician and the physician, and an Oklahoma City patient paid $22, the manufacturer receiving $9.10 and the physician $12.90. Similar figures are available for prescriptions filed in Madison, Wis., Minneapolis and Denver. Moreover, the actual cumulative figures indicate that one group of physicians in Iowa received more than $42,000. One physician in a small town in Texas received almost $15,000, a sum equaled by physicians in Minneapolis, Waterloo, Iowa, Rockford, Ill., and other small communities.

The position of the American Medical Association on this practice has been stated definitely on several occasions. In 1924 the Section on Ophthalmology of the American Medical Association adopted a resolution stating:

Resolved, That the acceptance of commissions or considerations, either directly or indirectly, from opticians and optical houses in the sale of glasses is absolutely contrary to all our standards of medical ethics and is just as reprehensible as the splitting of fees.

That resolution was not presented to the House of Delegates and was therefore an action of the section but not an action of the American Medical Association. In 1942 a resolution was presented to the House of Delegates to the effect that

it be declared unethical for the members of the American Medical Association or its component branches to refer patients to commercial organizations, laboratories or other physicians who advertise to the public and others than the medical profession who employ steerers or cappers or who offer to pay rebates or commissions or in any other manner violate the Principles of Medical Ethics of the American Medical Association or its component branches.

This resolution was referred to a reference committee, which brought back a revised resolution to the House of Delegates. The following revised resolution was adopted:

Resolutions on Rebates: Your reference committee has given very serious consideration to these resolutions. It is the opinion of your reference committee that the practices referred to in the resolutions are beneath the dignity of a learned profession, are basically dishonest and are a violation of the Principles of Medical Ethics. Your reference committee therefore recommends that the following substitute resolutions be adopted:

Whereas, It has been brought to the attention of the House of Delegates that the unscrupulous practice of rebates to physicians is being engaged in by various commercial organizations, laboratories, supply houses and in some professional relationships between certain physicians; and

Whereas, All such practices are clearly in violation of the Principles of Medical Ethics; therefore be it

Resolved, That the House of Delegates of the American Medical Association express stern disapproval of the practice by any of the members of its component societies of referring patients to commercial organizations, laboratories or other physicians who advertise to the public and others than the medical profession, who employ so-called steerers or cappers or who pay, or offer to pay, rebates or commissions in any guise whatsoever, or who in any other manner violate the Principles of Medical Ethics of the American Medical Association; and be it further

Resolved, That any member violating these resolutions be subject to such disciplinary action as is deemed advisable by the county society in which such physician holds membership; and be it further

Resolved, That the Secretary of the American Medical Association be instructed to send a copy of these resolutions to each state and county society accompanied by a letter to the secretary of each setting forth that all such unethical practices are disreputable and unscrupulous and, if not controlled, may soon besmirch the reputation of the entire medical profession.

RECENT ADVANCES IN THE TREATMENT OF CARCINOMA OF THE LARYNX

The problem in carcinoma of the larynx, as in carcinoma elsewhere in the body, is early diagnosis; next comes the choice of therapy. New and Waugh [1] considered the curability of carcinoma of the larynx in 107 cases in which operation was performed at the Mayo Clinic prior to 1938; an operative mortality of less than 1 per cent and 64.5 per cent of five year cures were reported. They state that almost all of the patients who had had a conservative operation developed a useful voice and that those who required laryngectomy were able to talk by means of the pharyngeal muscles or an artificial larynx.

Another advance in the therapy of carcinoma of the larynx was the irradiation method of Coutard and the more efficient use of radium. The fractional dose technic of Coutard is the prevailing method of roentgen treatment now in use. Moderate daily doses of roentgen rays are employed until a pronounced reaction is produced in the skin and the mucous membrane. The Jacksons [2] predicted in 1938 a progressive decrease in the relative number of laryngectomies. They felt that the greatly increased efficiency of irradiation indicated that laryngectomy should be limited to surgical subjects of good general expectancy. The Jacksons also stated that extrinsic growths are less amenable to operation and more amenable to irradiation as compared with intrinsic lesions. The major considerations in the selection of a method of treatment of laryngeal cancer, according to Jackson and Blady,[3] are the prospects of cure of a fatal disease and conservation of the voice. Among the secondary considerations are duration of morbidity, degree of discomfort and possibility of complications. Indications for laryngofissure and for laryngectomy are fairly well established.

Cutler [4] in a recent communication raises the question of permissibility of giving preference to radiotherapy, both for early carcinoma of the true cord amenable to laryngofissure and for intrinsic carcinoma of the larynx when the disease is so advanced as to require total laryngectomy. He has modified the Coutard method by increasing the daily dosage and by shortening the total number of days. Thus, instead of 6,000 to 7,000 roentgens being given in four to seven weeks to two fields, 6,000 to 6,500 roentgens are administered in eighteen days to one field. The evidence indicates that the more radioresistant lesions require not only a maximum total dose but a maximum daily dose to assure their complete sterilization. The method of concentration radiotherapy was combined with telecurietherapy. Concentration radiotherapy apparently resulted in cure of laryngeal cancers not curable by the less intense divided dose technic. The effect has been especially significant in intrinsic carcinoma of the larynx technically amenable to laryngectomy but too advanced for laryngofissure, because here laryngectomy is the only alternative to irradiation. An analysis of the results of irradiating 118 consecutive patients with cancer of the larynx at the Chicago Tumor Institute from 1938 through December 1942 revealed that patients with cancer of the true cords amenable to laryngofissure obtained equally good results with irradiation. The choice between laryngectomy and irradiation is much more difficult. Generally speaking, irradiation is preferable if the chances of cure are equally good. Any condition which indicates a short life expectancy, such as advanced age, heart disease, advanced arteriosclerosis, diabetes and pulmonary tuberculosis, should influence the decision against laryngectomy. When the microscopic structure shows anaplasia, especially with the formation of spindle cells, the lesion is nearly always highly malignant and offers a bad prognosis, regardless of whether a surgical procedure or irradiation is used. Cases in which an early lesion is limited to the middle of one cord yield about 80 per cent cures by laryngofissure and, according to Cutler, already offer at least an equal chance of cure by adequate irradiation, with restoration of the voice to normal. In the treatment of clearly operable cancer of the larynx, therefore, the choice between laryngofissure and irradiation is not nearly as important as the choice between laryngectomy and irradiation.

Cutler has obtained in the treatment of 118 consecutive patients 42 per cent five year cures and 39 per cent three year cures. With his method of concentration radiotherapy, certain forms of cancer of the larynx previously regarded as incurable by irradiation were cured. When the cords are freely movable or only partly fixed by the carcinoma, curability is high; but, when they are completely fixed, cure is less common and laryngectomy is indicated. Cutler stresses the fact that in this series a group of patients with intrinsic squamous carcinoma of the larynx too advanced for laryngofissure and requiring total laryngectomy have been cured with irradiation. He believes that laryngectomy should be limited to intrinsic lesions, with complete fixation of the cords occurring in good surgical subjects of good life expectancy.

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Current Comment

MEDICAL MOTION PICTURES

Although photographic film was scarce during the war, many high quality 16 mm. color motion pictures were made on various aspects of medicine and surgery. These films illustrate improved understanding of the problems involved in the production of scientific motion pictures. There is evidence of advanced planning, indicating that a script, or at least a working outline, was prepared and discussed before the actual "shooting" had begun. Such a procedure resulted in better continuity and reduced the expense of taking a great deal of unnecessary footage. In this respect the film shortage may have been a blessing in disguise. Poorly made, illegible titles are slowly disappearing; sound films are becoming more widely used; animated drawings are often inserted to point up important phases and to portray sequences which cannot be seen with the naked eye. The use of animated drawings in scientific films is extremely fertile in its possibilities. Pharmaceutical houses and other manufacturers of medical supplies are taking a more active interest in the production of scientific motion pictures. In such instances the talents of the best available personnel are usually employed. Generally the result is a well organized, clearly presented teaching film, free from advertising. Now that photographic equipment and materials are becoming more readily accessible and more physicians are returning to private practice and research, the making of scientific films will be accelerated. Careful planning based on experience contributes immeasurably to a successful motion picture.

PEPPER SUBCOMMITTEE REPORT ON NATIONAL HEALTH INSURANCE

Many doctors throughout the nation were startled by a widely circulated newspaper report to the effect that a subcommittee of the Committee on Education and Labor of the United States Senate had issued a report favoring compulsory sickness insurance. Accompanying the report when issued was a newspaper release of considerable length which indicated that it was the belief of this subcommittee that private medical insurance plans have failed; also that the report represented "substantial approval of President Truman's health message and the Wagner-Murray-Dingell health bill by a bipartisan group of Senators; but neither are specifically endorsed." The report was signed by Senators Pepper, Florida; Aiken, Vermont; Thomas, Utah, and Murray, Montana. It was stated that Senators Taft, Ohio, and Smith, New Jersey, dissented from some of the findings and conclusions of the report and that Senators Hill, Alabama, Tunnell, Delaware, and Morse, Oregon, "have not completed their study of the subject of this report." On July 23 Senator Donnell, Missouri, took Senator Pepper severely to task before the Senate, charging that the subcommittee had no right to issue such a report to the press before it had been submitted to the entire committee. He charged that the press release contained misstatements of fact and that the entire procedure was improper. On July 24 Senator Pepper replied, claiming that he had been trying to get action on his report because his committee was to be discharged on August 1. He admitted the misstatements of fact in the press release and he admitted that it was not proper to say "bipartisan" when only one member of the minority party had given his assent. He admitted that there "might be some technical delinquencies on the part of himself as chairman" but stated that "it was not intentional," and he apologized in the words "I am exceedingly sorry that inadvertently such a thing may have occurred." The Senate was so greatly concerned with the extension of price control that the debate was halted. This comment is published to reassure physicians that the Senate Committee of Education and Labor has not acted on the Wagner-Murray-Dingell bill. The release of the report by Senator Pepper together with the press release may well be considered propaganda of the same type as has regularly characterized the actions of Senators Pepper and Murray.

THE TREND OF MEDICAL PRACTICE—A HISTORICAL NOTE

During the last quarter century medical attention has turned increasingly to diagnosis, to internal medicine with its numerous subdivisions and to physiologic surgery. In August 1919 Dr. Olin West, then editor of the *Journal of the Tennessee State Medical Association*, published an editorial indicating that young physicians were loath to enter general practice because of the immense appeal of surgery as a specialty. Sir William Osler, the regius professor of medicine at Oxford, wrote Dr. West as follows:

"Why is it so?" *Is it so?*

About your statement that young physicians are loath to enter general practice I cannot express an opinion, but surely you have misjudged the situation in internal medicine. As I see it, the outlook in the United States has never been so hopeful. Take two or three indications. Compare the numbers in attendance at the surgical and medical sections of the A. M. A. for the past ten years. I have not the figures as I write, but you will find that there has been a steady increase in the medical section, numbers of which now exceed those in the surgical section. The surgeons have had their day—and they know it! The American St. Cosmas and St. Damien—the Mayo Brothers—have made their clinic today as important in medicine as it ever was in surgery. Wise men! they saw how the pendulum was swinging. And lastly, the schools are everywhere organizing up-to-date medical clinics, which are attracting the pick of the younger men, who are keen to realize that the future is, as indeed it ever has been, with medicine. In wagging the medical dog the surgical tail has been an immense stimulus, and if in many places only the tail is visible, where does the fault lie? In not organizing in every hospital of 100 beds a good medical clinic for *one* man with paid assistants and a good clinical laboratory. Let the smaller institutions begin to spend as much on the medical as on the surgical clinic, and give the young physicians a chance.

May I finish with a medico-chirurgical story from the life of Georges Mareschal, who fought such a good fight for French surgery in the early part of the 18th century. Mareschal cut Fagin, the chief physician to Louis XIV, for stone. At that time the surgeons and physicians were sworn foes. After the operation, when Mareschal would give to his patient some counsel as to diet, the bitter old man repulsed the surgeon with the remark "I have had need of your hands, but thank God! Sir, I have no need of your head to order my way of life." Times have changed—and are changing!

MEDICINE AND THE WAR

NAVY

NAVAL RESEARCH TO AID UNIVERSITIES

The largest scale dissemination of scientific information in history was recently begun with the transfer of a mass of scientific documents by the Office of Scientific Research and Development to the Library of Congress for free distribution to universities and libraries throughout the United States.

These valuable documents, the results of the tremendous wartime research program of the Office of Scientific Research and Development, were compiled by leading scientific minds of our country. The Navy's Office of Research and Inventions, after collecting the first 100,000 research documents, suggested transfer of the total OSRD collection to the Library of Congress and lent its full support to this transfer project.

Capt. Robert D. Conrad, director of the Planning Division, Office of Research and Inventions, stated that "this distribution to the leading scientific libraries of the country is a forward step in the interchange of scientific information between the military and civilian establishments."

The Office of Scientific Research and Development, which is now in the process of liquidation, has transferred funds for this project to the Library of Congress. Had these funds not been made available, the distribution of surplus copies of OSRD reports would have been extremely limited, thus losing to American interests the results of a huge investment in research. Because of the foresight of the Bureau of the Budget and the Office of Scientific Research and Development in approving and transferring these funds, and the support given by the Office of Research and Inventions, this great mass of information soon will be made available to colleges, universities and libraries throughout the country at no cost whatever.

Some idea of the scope of this project can be seen from the comment made by Dr. Mortimer Taube, assistant director for operations, Acquisitions Department of the Library of Congress, after the library had agreed to undertake the project: "Three million pieces, equal in size to the entire New York Public Library, will be sorted, checked against declassification files and subjected to preliminary cataloguing controls. Included in this number are some 45,000 different titles."

The Publication Board of the Department of Commerce has already aided in dissemination of documents declassified by OSRD, the Army and the Navy. It is estimated that 80 per cent of the total number will be free from security regulations, with only the remaining 20 per cent limited to properly authorized personnel.

The National Defense Research Council, that section of the Office of Scientific Research and Defense assigned to technical nonmedical research, conducted elaborate research programs in nineteen main divisions. These include the subjects of physics, radar, radio coordination, rocket ordnance, chemistry, optics and camouflage, absorbents and aerosols, electrical communication and subsurface warfare.

Under the subsurface warfare division, carried on in part at the Electronics Laboratory, San Diego, Calif., the sonar program issued a report which told of "shrimp" noises which would mask the sounds created by submarines, thus deterring the underwater detection equipment. Also described were floating expendable radio-sono buoys which were "parachuted" from planes.

Titles of the reports cover a heterogeneous range from "Microwave Radar Reflections" (Massachusetts Institute of Technology Radiation Laboratory, December 1945) to "Progress Report on Physical and Stress Corrosion Properties of Magnesium Alloy Sheet" (Rensselaer Polytechnic Institute, March 1945). These reports should be of interest and use to scientists, educators and industrialists in many fields.

NAVY WANTS SURGEONS

Calling attention to the fact that at the end of the war emergency the Navy Department will stand in need of surgeons because existing law authorizes the President to appoint only 100 acting assistant surgeons, the department has requested the enactment of a bill to authorize the appointment of 250 for the postwar needs of the Bureau of Medicine and Surgery of the Navy. Responding to the request, Senator Walsh, Massachusetts, has introduced the necessary legislation.

The Acting Secretary of the Navy, Under Secretary John L. Sullivan, stated in an explanatory letter "It is planned in the postwar navy to continue to recruit officers for the Medical Corps by the appointment of graduates of schools of medicine as acting assistant surgeons for internships in naval hospitals. It is the experience of the Navy Department that appointment in the Medical Corps should be for a probationary period, during which the qualifications of the appointee and his adaptability for the naval service can be determined."

Secretary Sullivan stated that great difficulty is expected in securing the needed number of medical officers for the postwar navy because a very small percentage of 13,500 reservists contacted by mail wish to transfer to the regular navy, and "a large percentage of those reserve officers desiring to transfer are not eligible because of their age and physical status."

Pointing out that "in the past the majority of original appointments to the Medical Corps of the Navy has been of physicians who completed their internship in civil life and were appointed directly to the grade of Assistant Surgeon," Secretary Sullivan said that securing assistant surgeons from civilian sources will be difficult because "interns are offered excellent advanced training as resident physicians in civilian hospitals and an opportunity to specialize in a particular branch of medicine" and that still "others are offered teaching assignments and partnerships with prominent and outstanding physicians."

NAVY RELEASES TRAINING FILMS TO EDUCATIONAL INSTITUTIONS

More than five hundred training films and film strips are being released by the Navy Department for general use by educational institutions, civic groups and manufacturers. The films, representing the largest single collection of training films ever released by the armed services, were produced during World War II by the Motion Picture Production Section of the U. S. Naval Photographic Service. Duplicated negatives of the films are being released to the United States Office of Education, which will have charge of distribution. However, because of cataloguing and production delays, prints of the training films will not be available until early fall. All medical and related films, with the exception of those dealing with first aid, will be restricted in use to medical schools and associated instructional agencies. Inquiries concerning the films should be addressed to the United States Office of Education, Washington, D. C.

NAVY AWARDS AND COMMENDATIONS

Lieutenant Eugene Stuart Sevensma

Lieut. Eugene S. Sevensma, Grand Rapids, Mich., was recently awarded the Bronze Star and the presidential citation for "meritorious achievements in connection with operations against the Japanese while serving on a destroyer in the vicinity of Okinawa, April 12, 1945. During and following enemy air attacks, when his ship suffered one hit and two near misses, he and his medical assistants cared for more than 50 wounded men although normal lighting and power had been lost throughout the ship. His professional skill and devotion to duty were in keeping with the highest traditions of the U. S. Naval Service." Dr. Sevensma graduated from the University of Michigan Medical School in 1942 and entered the service July 10, 1943.

ARMY

ARMY AWARDS AND COMMENDATIONS

Lieutenant Colonel Frederick L. Liebolt

Lieut. Col. Frederick L. Liebolt, chief of surgical services at the AAF Regional and Convalescent Hospital, Coral Gables, Fla., was recently awarded the Army Commendation Ribbon. The citation read: "By direction of the Secretary of War and in accordance with the provisions of Circular 377, WD, 1945, you are hereby authorized to wear the Army Commendation Ribbon for your high degree of professional ability displayed in your capacity as chief of the orthopedic branch of the surgical service during the year 1945. Through your devotion to duty, loyalty, cooperation, industry and initiative, the Orthopedic Branch accomplished a tremendous amount of work. In fact, this service was as large as the rest of the surgical service combined, which service contained approximately a third of the beds of the entire hospital, which had a capacity of 3,000. It is a matter of record that for one year (1945) a total of 8,429 patients were admitted to your service, or a monthly average of 702 patients; that your service did a total of 1,121 operations, or a monthly average of 93. It is also a matter of record that, although your service handled this tremendous amount of material, the CDD rate averaged only 20 a month, which is proof in itself of the excellence of treatment received by patients on your service, and also of the tremendous reduction in non-effective rate which it represents. The average census during this year on your service was 700, which also is evidence that the patients were not allowed on the service any longer than necessary. In addition to this patient load, it is a matter of record that your service performed a total of 548 outpatient consultations per month and 9,586 physical therapy treatments a month. It is also a matter of the surgeon's personal knowledge that this tremendous service could not have been adequately supervised and administered if you had not spent many of your off-duty hours, at night, Saturdays, Sundays and holidays on your service personally caring for the seriously ill patients and helping those who were on duty. In spite of this tremendous work load the mortality and morbidity figures for your service were extremely low and much under the average figures for the rest of the Army." Dr. Liebolt graduated from Washington University School of Medicine, St. Louis, in 1930 and entered the service Oct. 1, 1943.

Major Kenneth H. Abbott

Major Kenneth H. Abbott, Rochester, Minn., was recently awarded the Bronze Star "for meritorious achievement in connection with military operations against the enemy on Cebu, Philippine Islands, from March 26 to April 25, 1945. During this period when his hospital was located within range of enemy machine gun, mortar and artillery fire, by working eighteen to twenty hours daily, he performed more than two hundred operations, a large number of which were delicate and time consuming brain operations. By his stamina, devotion to duty, excellent professional judgment and ability he saved many lives, decreased the cases of permanent incapacitating damage and alleviated much suffering, thereby directly contributing to the excellent medical service performed during military operations in Cebu Province." Dr. Abbott graduated from the College of Medical Evangelists, Loma-Linda, Calif., in 1936 and entered the service June 19, 1943.

Captain Walter B. Shelley

The Commendation Ribbon was recently awarded to Walter B. Shelley, Chester, Pa., "for his work as head of the clinical investigation section of the Armored Medical Research Laboratory, Fort Knox, Kentucky." Dr. Shelley graduated from the University of Minnesota School of Medicine in 1943 and entered the service Jan. 5, 1944.

Lieutenant Colonel Samuel W. Moore

The Legion of Merit was recently awarded to Lieut. Col. Samuel W. Moore, New York, "for exceptionally meritorious conduct in the performance of outstanding services as chief of surgical service, 56th General Hospital, from Nov. 1, 1944 to May 15, 1945. Lieutenant Colonel Moore, through the exercise of superior leadership and outstanding professional ability, was able to resolve the difficulties involved in providing surgical care for thousands of patients under pressure of critical conditions. His skilled direction of the surgical service provided the best possible care for the casualties processed by the hospital. His contribution to the success of operations was highly valuable and served to reflect credit on himself and the United States Army." Dr. Moore graduated from Harvard Medical School, Boston, in 1930 and entered the service July 15, 1942.

Colonel Rex L. Diveley

The Legion of Merit was recently awarded to Col. Rex L. Diveley, Kansas City, Mo., for "exceptionally meritorious conduct and outstanding service." The award was presented by Major Gen. Paul Hawley, chief of the medical division of the Veterans Administration, at the meeting of the Nebraska State Medical Association in Lincoln, Neb. The citation, which covers particularly his service from May 15, 1944 to May 15, 1945, when he established convalescent centers and camps, states that "as a direct result soldiers who might have been permanently disabled were conditioned and returned to duty at a time when every ounce of manpower was desperately needed." Dr. Diveley graduated from the University of Kansas School of Medicine, Kansas City, in 1917 and entered the service July 22, 1942.

Colonel Harry Plotz

The Legion of Merit was recently awarded to Col. Harry Plotz, Brooklyn, for his wartime research work. The citation stated that Colonel Plotz "contributed to methods of production of an effective typhus vaccine and developed technics for accurate diagnosis of both virus and rickettsial diseases." Dr. Plotz is the only American staff member of the Pasteur Institute of Paris, an officer in the French Legion of Honor and holds numerous decorations from other countries and institutions. He graduated from Columbia University College of Physicians and Surgeons, New York, in 1913 and entered the service Jan. 29, 1941.

Colonel Jenner G. Jones

The Legion of Merit was recently awarded to Col. Jenner G. Jones, Washington, D. C., for outstanding service from March 1942 until August 1943 and again from May 1945 until December 1945, as chief, Station Branch, chief, Issue Branch and deputy chief, Supply Service of the Office of the Surgeon General. Dr. Jones graduated from Washington University School of Medicine, St. Louis, in 1927 and entered the service July 1, 1934.

PUBLIC HEALTH SERVICE

AWARDS AND COMMENDATIONS

William Wesley Nesbit

A Bronze Star for meritorious achievement in connection with operations against the enemy was awarded recently to William Wesley Nesbit, Surgeon, U. S. P. H. S., now medical officer in charge of the Marine Hospital, Galveston, Texas. According to the citation accompanying the award, "Dr. Nesbit displayed outstanding professional ability, initiative and sound judgment in the treatment of matters pertaining to medical activities of military government and in planning, integrating and implementing efficient and unprecedented medical services for the care of the civilian populations in occupied areas" while serving in the Medical Section, Logistics Division, on the staff of Admiral Nimitz from March 16, 1944 to Sept. 1, 1945. The citation further stated that his conduct, keen analytical approach to problems and devotion to duty were at all times in keeping with the highest traditions of the United States Naval Service.

Dr. Nesbit was originally commissioned Assistant Surgeon (R) P. H. S. in July 1926 and a year later accepted a regular commission. He has served continuously in the Public Health Service since that time and attained his present rank of temporary medical director on July 1, 1944. He graduated from Jefferson Medical College of Philadelphia in 1928.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Clapp, Henry W.....Montgomery
Couch, Edwin W.....Winfield
Dark, Harold U.....Alexander City
Dowdy, Frederick A.....Birmingham
Farrior, James H.....Montgomery
Gunter, William A.....Montgomery
Jenkins, John F. Jr.....Birmingham
Kaiser, Elias N.....Montgomery
Kennedy, Frank F.....Birmingham
Kirpatrick, Samuel McC.....Selma

Arizona

Gilbert, Gordon L.....Phoenix
Tuveson, Leo L.....Phoenix

Arkansas

Greutter, John E. Jr.....Little Rock

California

Adams, Fred T.....San Francisco
Bachrach, Reinhard J.....Salinas
Bauer, Franz K.....Los Angeles
Bennett, Edwin S.....South Pasadena
Berger, Max M.....San Francisco
Bergstrom, Brigham J.....San Francisco
Berk, Morris.....San Francisco
Berke, Samuel D.....Indio
Berman, Abe.....Sacramento
Briscoe, Lance E.....San Francisco
Brown, Walter B.....N. Hollywood
Burnight, Ernest R.....Marysville
Cantarow, Jacob H.....Los Angeles
Davis, Ralph J.....Visalia
Downs, Howard S.....Ontario
Dubin, Nathan A.....Placer County
Feder, Morris R.....Los Angeles
Fortner, Harry C.....Sherman Oaks
Frazier, Frank F.....Bell
Frost, David.....Williams
Fry, Orvin P.....Grass Valley
Gillman, Edward L.....Lomita
Glass, Bernard R.....San Francisco
Goodwin, Marcus.....Napa
Gordon, Milton.....San Francisco
Hadley, Russel C.....Los Angeles
Hammel, Max A.....Santa Barbara
Hargrove, Garland K.....Berkeley
Harman, Glen S.....Santa Barbara
Harris, Alvin J.....San Francisco
Hartwig, Carl H.....San Francisco
Hollister, Clinton B. H...Santa Barbara
Hopp, Eugene S.....Los Angeles
Jamison, Horace W.....Los Angeles
Kahlstrom, Carl E.....Long Beach
Kent, Glen W.....Berkeley
Kleinsorge, Henry E.....Sacramento
Kroopf, Stanford S.....Los Angeles
Lange, Jack D.....San Francisco
Langer, Joseph B.....San Bernardino
Leavitt, Arthur S.....Los Angeles
Leo, Sidney D.....Los Angeles
Levin, Herman G.....Westwood
Lindholm, Raymond C.....San Diego
Lipschultz, Bernard M...W. Los Angeles
Loe, Harris D.....Oakland
McGuinness, John E.....San Francisco
Mann, Nathan.....Alameda
Mapes, William D.....San Fernando
Marple, Charles D.....San Anselmo
Marriott, Joseph LeM.....Alameda
Mellor, Norman H.....Riverside
Mitchell, Cyril L.....Santa Monica
Moffitt, Laurl W.....San Diego
Moore, Newell L.....Santa Ana
Moreland, James W.....San Bernardino
Mott, Loran E.....Downey
Munk, Ivan A.....El Monte
Murray, John F.....Fresno
Neufeld, Alonzo J.....Los Angeles
Nixon, Norman.....Beverly Hills

California—Continued

Olker, Louis C.....Chico
Paul, Olin.....North Hollywood
Paull, Ross.....La Jolla
Pedersen, Paul M.....San Anselmo
Platt, John H.....Oakland
Raney, Aidan A.....Los Angeles
Robertson, James H.....Long Beach
Rocovich, Peter M.....Los Angeles
Roger, Alexander A.....Los Angeles
Sanfilippo, Philip J.....Oakland
Saxon, Albert.....Los Angeles
Schuster, Emile G.....Oakland
Segal, Robert.....St. Lompoc
Seibly, John S.....Bakersfield
Seletz, Emil.....Los Angeles
Sharp, Klenner F.....Fresno
Shelton, Robert McN.....Inglewood
Shurts, John J.....San Francisco
Skoller, Julius.....Los Angeles
Smith, John V.....San Francisco
Smith, Robert L. Jr.....San Francisco
Smith, Samuel N.....Alhambra
Soll, Sydney N.....Los Angeles
Stafford, Claude C.....Pismo Beach
Stahl, Philip E.....Palo Alto
Starr, Wendell W.....Los Angeles
Stern, Robert G.....Los Angeles
Swift, Leon M.....Marysville
Talbot, John C.....Berkeley
Taylor, Robert M.....Los Angeles
Thurlow, John F.....Santa Rosa
Twiss, Arthur R.....Berkeley
Washburn, Hyrum C.....El Monte
Watson, Leslie C.....Long Beach
White, Neil K.....Dinuba
Wilks, Frank W.....Los Angeles
Williams, Russell D.....Monterey
Wills, John W.....Palo Alto
Wolfson, Isaac E.....Los Angeles
Wood, Rodney F.....Wasco
Woolington, Sam S.....Long Beach
Young, Charles O.....Los Angeles

Colorado

Beaver, William C.....Pueblo
Beebe, Kenneth H.....Sterling
Blumstein, Charles L.....Grand Junction
Espey, James G. Jr.....Trinidad
Hartshorn, Duane F.....Ft. Collins
Hutchison, James E.....Denver
McCarthy, David W. Jr.....Longmont
Sherman, Leon H.....Denver

Connecticut

Acquarulo, Louis C.....New Haven
Clark, William T.....Bridgeport
Cunningham, Robert D. M.....Stanford
Gaffney, John J.....Danbury
Katz, Irving.....Meriden
Oughterson, Ashley W.....New Haven
Prignano, John V.....East Hartford
Starkey, George W. B.....Hartford
Timm, Alexander B. Jr.....Milford
Tonken, Louis C.....Hartford

Delaware

Kelley, James W.....Wilmington
Preston, Daniel J.....Wilmington
Preston, Willard F.....Wilmington

District of Columbia

Bachrach, Louis B.....Washington
Ball, George L.....Washington
Cohen, Max H.....Washington
Dick, Arthur.....Washington
Feldman, Max E.....Washington
Hughes, John A.....Washington
Hyde, Anson R.....Washington
Myers, Henry J.....Washington
Snyder, Luther H.....Washington

Florida

Cusani, Benedict A.....Miami
Grable, Theodore J.....St. Petersburg
Hoover, Russell D. D.....St. Augustine
Lanier, James C. Jr.....Jacksonville
Lewis, Alfonso L.....Tampa
Lombardo, Samuel S.....Jacksonville
Moore, John P.....Ocala
Rand, Harold.....Rivo Alto Isle Miami
Weinreb, Joseph.....Jacksonville
Whaley, Fred E.....St. Petersburg

Georgia

Brookshire, Paul F. Jr.....Winder
Cook, Ellison R. III.....Newnan
Harbin, Bannester L.....Rome
Harris, Raymond.....Ocilla
Logue, Robert B.....Atlanta
Miller, Sherman.....Atlanta
Neuffer, Frank H.....Atlanta
Temples, Leo G.....Dalton
Uhrich, Gerard I.....Atlanta
Walker, Jesse L.....Cuthbert

Idaho

Affleck, Dean H.....Twin Falls
Daines, Hazen B.....Boise
Groom, Corwin E.....Pocatello
Stromberg, Murray G.....Salmon

Illinois

Adams, Joel E.....Mattoon
Alexander, Howard G.....Hines
Armstrong, Paul E.....Chicago
Austin, John O.....Chicago
Austin, Marvin F.....Chicago
Bayliss, Milward W.....Chicago
Belgrade, Irvin S.....Chicago
Buchanan, Donald L.....Chicago
Carey, Gregory M.....Joliet
Cermak, Miles.....Berwyn
Cohen, Abraham E.....Peoria
Cooley, William Jr.....Peoria
Davies, Raymond E.....Spring Valley
Dearborn, Robert F.....Byron
Deering, William V. B.....Chicago
Dolph, Ivar E.....Manito
Falk, Henry.....Manteno
Feldberg, Irving.....Maywood
Finder, Jerome G.....Chicago
Frankel, Usher L.....Chicago
Friedman, Harold S.....Chicago
Gaines, Reuben B.....Chicago
Gaynes, Leonard.....Chicago
Gelfand, Ben.....Chicago
Gerber, Samuel T.....Chicago
Gillesby, William J.....Effingham
Goodpasture, Willard C.....Rockford
Goodson, Samuel B.....Chicago
Gootnick, Abraham.....Chicago
Greenbaum, Philip S.....Downey
Grimm, Harold A.....Chicago
Grossman, William L.....Manteno
Grove, Jacob S.....Chicago
Highsmith, Ferris D.....Chicago
Hoeksema, Henry.....Chicago
Hoesley, John B.....Chicago
Johnson, Arvid T.....Rockford
Jones, Thomas D.....Chicago
Jordan, Roland F. K.....Pekin
Kadas, Louis.....E. St. Louis
Kaim, Samuel C.....Rock Island
Kamm, Bernard A.....Chicago
Kasmer, Edward T.....Chicago
Kelikian, Hampar.....Chicago
Kohlstedt, Kenneth D.....Springfield
Krolikowski, John R.....Chicago
Landau, Richard L.....Chicago
Lery, Abraham J.....Chicago
Lock, Frank.....Chicago
Loosli, Clayton G.....Chicago
Lowenstein, Ernest.....Mt. Carmel
McCallen, Albert M.....Freeport

PHYSICIANS SEPARATED FROM SERVICE

Illinois—Continued

McClanahan, Charles W....River Forest
McDonnell, Thomas J. Jr.....Sterling
McMillan, James T.....Chicago
McNamara, Edward G.....Chicago
Marino, Charles J.....Chicago
Marks, Frederic S.....Elgin
Mason, Lorne W.....Evanston
Mastrianni, Dominic T.....Chicago
Mencarow, William J.....Chicago
Mergener, John C.....Chicago
Mittleman, Harry A.....Alton
Nelson, Peter A.....Chicago
Neukamp, Frank H.....Aurora
Olinger, David L.....Lombard
Osterhagen, Harold F.....Mattoon
Pagano, Alfred L.....Chicago
Peffer, John R.....Chicago
Phillips, Roger K.....Chicago
Pilchman, Samuel.....Ladd
Pollowy, Chester F.....Chicago
Pribble, John H.....La Grange
Purcell, Matthew J.....Chicago
Quinn, Hubert E.....Chicago
Reilly, Maurice J.....Chicago
Rian, Oliver.....East Peoria
Riba, Leander W.....Chicago
Richardson, Gene T.....Chicago
Robin, Milton.....Chicago
Roeder, Stuart D.....Milford
Roehm, Charles J.....Eureka
Rosenblum, Albert F.....Chicago
Rothenberg, Morris.....Salem
Rubenstein, Joseph.....Chicago
Sackadorf, Harry.....Hines
Schleissner, Leopold.....Chicago
Schowengerdt, William H....Champaign
Schroder, Harold M.....Pontiac
Seely, Harmon D.....Clinton
Seifert, William F.....Rockford
Shawver, John R.....Marion
Stein, Charles.....Chicago
Steinman, Floyd H.....Roberts
Stodsky, Bernard.....Chicago
Sugden, Charles R.....Deerfield
Sukey, John A.....Chicago
Talbott, Ralph E.....Chicago
Tambone, John R.....Chicago
Thomas, John A.....Urbana
Thorpe, Henning H.....Chicago
Towle, Victor M.....Chicago Heights
Turow, David D.....Chicago
Walsh, John J.....Chicago
Walters, William H.....Chicago
Webb, Edward F.....Rockford
Weber, Lawrence F.....Olney
Werba, Daniel R.....Danville
Wheeler, Robert T.....Chicago
Winter, Irwin C.....Evanston

Indiana

Botts, Harry H.....Marion
Engle, John M.....Winchester
Ferguson, Arthur N.....Fort Wayne
Ferguson, William B.....Indianapolis
Garner, William H.....New Albany
Godwin, Joseph D.....Indianapolis
Hall, John R.....Indianapolis
Hamilton, Emory D.....Kendallville
Havens, Russell E.....Cicero
Howell, Robert D.....Indianapolis
Jerrell, Paul M.....Marion
Keefe, Thomas L.....Logansport
Kern, Clarence G.....Lebanon
Kress, George L.....Warsaw
Lamey, James L.....Anderson
Logan, Jesse R.....Evansville
Manalan, Samuel A.....Indianapolis
Myers, Robert K.....Chili
Owen, John E.....Indianapolis
Spalding, Joseph J.....Indianapolis
Thomas, Everett W.....Leesburg
Wagoner, George W.....Burrows
Zaring, Byron K.....Columbus

Iowa

Colloff, Ben.....Iowa City
Cowan, Lewis H.....Perry
Huston, Marshall D.....Centerville
Ide, Lucien W.....Creston
Lindholm, Hugo A.....Iowa City
Lindley, Ellsworth L.....Muscatine
Mueller, John J.....Dubuque
Murphey, Arlo L.....Fredericksburg
Sperry, Frederick S.....Clarinda

Kansas

Armitage, Albert C.....Hutchinson
Athy, Gregg B.....Columbus
Bowen, Clovis W.....Valley Falls
Hinshaw, Alfred H.....Kansas City
Jones, Edward T.....Manhattan
Monson, Kenneth R.....Lindsborg
Walsh, William S.....Halstead

Kentucky

Allen, Ralph W.....Pikeville
Baker, Everett H.....Louisville
Dorton, David H. Jr.....Paintsville
Helmbold, August F. W....Fort Thomas
Howard, Robert S.....Slemp
Hoy, Robert T. Jr.....Fort Thomas
Huesing, William I.....Fort Thomas
Kinsman, James M.....Louisville
Mahaffey, Hugh.....Richmond
Manly, Wilbur F.....Louisville
Marcum, Samuel G.....Irvine
Mayer, Jacob M.....Mayfield
Wald, Herbert.....Louisville
White, Edgar C.....Louisville

Louisiana

Colomb, Brooks A.....Romeville
Dees, Theodore A. Jr.....Lake Charles
Herrington, Cecil P.....Alexandria
Kahle, Henry R.....New Orleans
Koretzky, Harry.....New Orleans
Levy, Harold B.....Shreveport
Mueller, Camillo F.....New Orleans
Taylor, Henry M.....New Orleans
Wilson, James A.....New Orleans

Maine

Dennison, Frederick C.....Thomaston
Finkelman, Harry.....Portland
Irgens, Edwin R.....Waterville
Roussin, William T.....Biddeford
Shelton, Merriwell T.....Augusta
Villa, Joseph A.....South Paris

Maryland

Davens, Edward.....Baltimore
Freeman, Irving.....Baltimore
Haase, John H.....Balto
Hunter, Oscar B. Jr.....Chevy Chase
Myers, Clyde P.....Inverness
Snyder, Jerome.....Baltimore

Massachusetts

Bonner, Hugh J.....Jamaica Plains
Burns, John J.....Gardner
Cone, Gertrude.....Dorchester
Cosgrove, James F. Jr.....Worcester
DeStefano, Francis T.....West Roxbury
Elkind, Henry B.....Belmont
Felsen, Herman.....Easthampton
Flashman, David H.....Boston
Flood, William E.....Boston
Goldfarb, Simon L.....Northampton
Gould, William C.....Kingston
Hinds, Charles B. Jr.....Worcester
Hoyt, William F.....Longmeadow
Jessup, James S.....Cambridge
Johnson, William J.....Lowell
Jonas, Norman W.....Pocasset
Layton, Manuel L.....Jamaica Plain
Levine, Albert.....Mattapan
Lichty, Joseph S.....Brookline
McManama, John C.....Waltham

Massachusetts—Continued

Merlin, Samuel A.....Dorchester
Mezer, Jacob.....Allston
Millet, John B.....Brookline
Mills, Ashley E.....Medford
Moses, David S.....Boston
Newmark, Nelson.....Longmeadow
O'Brien, Joseph A.....Dorchester
O'Neil, Richard T.....Northampton
Palmer, Edwin J.....Palmer
Rearick, John J.....Warren
Robinson, George E.....Fall River
Rooney, Charles E.....Woburn
Rudy, Harold A.....Cambridge
Saltz, Jerome C.....Boston
Sargent, Morgan.....Quincy
Shannon, Paul J.....Higham
Shapiro, Eli.....Roxbury
Sher, Jack E.....Brookline
Smerz, Anton.....Rutland Heights
Solomon, Frank A. Jr.....Boston
Steinberg, Theodore.....Woburn
Stone, Timothy P.....Boston
Tolpin, Isidor S.....Brighton
Weller, Alfred.....Arlington
Williams, Ashbel C.....Brookline
Wollenman, Oscar J. Jr.....Boston
Zadrozny, Mitchell J.....Worcester

Michigan

Collisi, Harrison S.....Grand Rapids
Czeresko, Anthony R.....Dearborn
De Waele, Paul L.....Bay City
Dunkin, Lloyd S.....Greenville
Furniss, Charles O.....Ann Arbor
Hammer, Howard J.....Detroit
Kelly, William H.....Lansing
Mabley, John D.....Detroit
Platt, Charles A.....Coldwater
Rottenberg, Leon.....Detroit
Rubright, LeRoy W.....Detroit
Smith, Maurice J.....Flint
Wood, Cornelius B.....St. Clare

Minnesota

Autry, Daniel H.....Rochester
Heller, Ben I.....North Mankato
Honke, Richard W.....Proctor
Koepsell, Arthur A.....St. Paul
Lewis, Floyd J.....Tracy
McElligott, Edmund W.....Breckenridge
Muir, Walter F.....Graceville
Muller, Albert E.....St. Paul
Nelson, Lloyd S.....Hibbing
Sjostrom, Lawrence E.....St. Peter
Wolkoff, Hyman J.....St. Paul

Mississippi

Crawford, Walter W.....Tylertown
Lotterhos, William E.....Crystal Springs

Missouri

Eck, Birkle.....St. Louis
Ford, Lee T. Jr.....St. Louis
Gates, Charles L.....Urich
Grindell, George A.....St. Louis
Kelly, Alto L.....Excelsior Springs
Knepper, Paul A.....St. Joseph
Lacy, Nicholas E.....Kansas City
Lawrence, Forrest C.....Springfield
Makovsky, Irwin H.....St. Louis
Missey, Wilburn C.....St. Louis
Netzer, Solomon.....Excelsior Springs
Obermeyer, Charles G.....St. Louis
Oungst, Daniel W.....St. Louis
Powers, John M. Jr.....Kansas City
Redmond, William S.....St. Joseph
Rosenfeld, Henry.....St. Louis
Statland, Harry.....Kansas City
Stump, David J.....Kansas City
Taylor, William E.....Springfield
Tureen, Louis L.....Clayton
Williamson, Walter E.....St. Louis
Yoskit, Harry.....Festus

PHYSICIANS SEPARATED FROM SERVICE

Montana

Fattic, Grover R. Jr.....Hot Springs
Nagel, Charles E.....Great Falls

Nebraska

Barta, Frank R.....Omaha
Dilworth, Warren M.....Omaha
Greenberg, Maynard M.....Omaha
Holmes, Lee C.....Hordville
Mangiameli, Carl L.....Omaha
Marks, Morton G.....Lincoln
Place, George E.....Lincoln

Nevada

Arbonies, William G.....Winnemucca

New Hampshire

Buchanan, Arthur P. Jr.....Winchester
Levitt, Harry.....Lebanon
Nangle, Thomas P.....Rochester

New Jersey

Bozzi, Robert.....East Orange
Captanian, Aram A.....Freehold
Cardwell, Edgar P.....Newark
Cutler, Milton.....Hammonton
Del Baglivo, Mario G.....Jersey City
Di Gioia, John J.....Jersey City
Dow, Robert F.....Paterson
East, Isaac C.....Jamesburg
Edelson, Samuel.....Interlaken
Fortunato, Joseph F.....Newark
Gebele, William X. Jr.....Lakewood
Giardina, Vincent J.....West Orange
Gonczy, Edward J.....Elizabeth
Handy, Vincent H.....East Orange
Hubbard, Robert D.....Camden
Hyer, Oscar H.....Matawan
Judson, George V. Jr.....Barrington
Kenny, James J.....Orange
Landis, Harry P. Jr.....Palmyra
Laufenberg, Joseph W.....Union City
Miller, George M.....Carteret
Morrison, John T.....Mountain Lakes
Nappi, Pasquale E.....Newark
Reynolds, Donald G.....Freehold
Rubin, Samuel.....Paterson
Sayers, Francis P.....Penns Grove
Schwartzberg, Fred I.....Paterson
Shirlock, Margaret E.....Vineland
Silberner, Herbert B.....Newark
Simpson, David B.....Bayonne
Sklar, Sol H.....Grantwood
Swiecicki, Martin E.....Barrington
Symes, Earl R.....Kearny
Taterka, Adrian.....Teaneck
Traganza, Robert W.....Camden
Tutela, Arthur C.....Newark
Watson, George A. Jr.....Crawford

New Mexico

Marchese, Vincent.....Ft. Wingate
Nissen, Wallace E.....Albuquerque
Ramer, Samuel M.....Las Cruces

New York

Aguirre, Sabino.....New York
Aibel, Louis.....Brooklyn
Alexander, Ralph E.....Bath
Allar, Ellis H.....Yonkers
Althouse, Darrell D.....Auburn
Amler, Alfred B.....New York
Anderson, George W.....Buffalo
Aronsohn, Charles M.....New York
Balkin, Seymour S.....Long Island City
Barcus, Harold.....Brooklyn
Bases, Leonard.....New York
Bennett, Courtenay L.....Poughkeepsie
Bensman, Louis L.....Riverdale
Berkman, James I.....New York
Berkow, Abraham.....New York
Best, Duncan L.....Middleburgh
Bianchi, Dominick A.....Rochester

New York—Continued

Bisher, William.....New York
Blase, Michael A.....Utica
Blond, Herman.....New York
Bongiorno, Michael A.....Brooklyn
Bookbinder, Nathaniel.....Peekskill
Brady, John M.....Brooklyn
Brancaccio, Ralph H.....Brooklyn
Brand, Maxwell R.....New York
Brill, Robert.....New York
Brusca, Donald D.....Central Islip
Burack, Philip I.....New Rochelle
Byrne, William A.....Seneca Falls
Cahan, Amos.....New York
Cajigas, Mariano.....Bath
Calarco, John J.....Jamaica
Calef, Bension.....Bronx
Carter, Claud E.....Bronx
Catoggio, Domenick M.....Long Island
Chatfield, Paul O.....New York
Ciocca, Angelo A.....North Tarrytown
Clyne, Irving M.....Far Rockaway, L. I.
Cussler, Robert C.....New York
Davis, Lawrence A.....New York
DeFelippo, Natale.....Brooklyn
Dell Cort, Amerigo P.....Canandaigua
Deneff, Carl.....Brooklyn
Deren, Moses D.....Syracuse
DeVito, Patrick U.....Brooklyn
Donlan, Joseph E.....Schenectady
Dunn, Robert H.....Northport
Emma, Edwin.....Castle Point
Epstein, Samuel.....New York
Faller, Harry R.....Port Jervis
Feigenbaum, Harry A.....Brooklyn
Feigin, Irwin H.....Forest Hills
Ferber, William L.....Brooklyn
Fisher, George E.....Brooklyn
Fisher, Joseph.....New York
Fleischer, Harry N.....Brooklyn
Fleischman, Arthur H.....Bronx
Flynn, James H. Jr.....Albany
Fragola, Anthony F.....Brooklyn
Frankel, Arthur N.....New York
Frankel, Israel A.....Bronx
Frankel, Samuel.....Bronx
Fratello, Louis.....Ozone Park
Freund, Seelig.....Bronx
Friedman, Ralph.....Freeport
Friedson, Bernard.....Brooklyn
Fuchs, Irving I.....Brooklyn
Gaines, Joseph A.....New York
Galasso, Joseph.....New York
Gellis, Sidney A.....New York
Gennis, Joseph.....New York
Genovese, Robert F.....Brooklyn
German, David P.....New York
Gianquinto, Peter J.....Brooklyn
Gill, Leo.....New York
Glasser, Samuel M.....Yonkers
Goetzel, Paul A.....Forest Hills
Goldbaum, Aaron.....New York
Goldberg, Leon.....New York
Goldblatt, Irving.....Brooklyn
Golden, Morton.....Brooklyn
Goldstein, Jacob M.....Brooklyn
Golstein, Frank.....New Rochelle
Goodman, Abel A.....Bronx
Goodman, Isidore M.....Brooklyn
Gordon, Arthur.....Long Island
Gordon, Frederick.....Bronx
Gordon, George.....New York
Gradinger, Arnold S.....Forest Hills
Graffeo, Anthony J.....Queens Village
Greenbaum, Joseph.....Brooklyn
Greisman, Jacob.....New York
Griesau, William A.....Albany
Gruber, Walter F.....New York
Gugliuzza, Peter V.....New York
Hamm, Frank C.....Brooklyn
Hart, Joseph C.....Poughkeepsie
Held, Albert E.....Brooklyn
Hirschl, Daniel.....Brooklyn
Hochbaum, William J.....New York

New York—Continued

Hoechster, Ludwig.....Brooklyn
Hollander, Arthur G.....Brooklyn
Holtzman, Samuel G.....South Fallsburg
Huber, Warren V.....Brooklyn
Iandoli, John P.....Yonkers
Jahraus, Kenneth G.....Buffalo
Kalmanoff, Herbert.....New York
Kaplan, Max B.....Brooklyn
Katz, Harry N.....Ellenville
Katz, Morris.....Bronx
Katzman, Joseph D.....Utica
Kestenbaum, Milton.....Brooklyn
Kinzly, John C.....Tonawanda
Kirsh, Israel E.....Batavia
Klupt, Robert L.....Brooklyn
Koretz, Harold.....Bath
Krugman, Saul.....Brooklyn
Lacovara, Vincent A.....Brooklyn
Lapid, Louis S.....Brooklyn
Lasky, Mortimer A.....Brooklyn
Lebhar, Neil F.....New York
Leon, Jerome L.....Staten Island
Lerman, Jacob.....Brooklyn
Levi, Ernst.....New York
Levitt, Leon M.....Brooklyn
Liberthson, Abraham.....Bronx
Lichterman, Jacob J.....Brooklyn
Ling, William S. M.....New York
Long, James E.....Buffalo
Longo, Frank A.....Yonker
Lucey, Robert E.....New York
Luloff, Harry.....Mt. Vernon
McDermott, Kenneth J.....Syracuse
Maier, John.....New York
Marcus, Edward.....New York
Markovit, Julius T.....Tonawanda
Mason, Irwin.....Bronx
Mason, Stuart A.....Yonkers
Matte, Michael L.....Bronx
Michaelson, Erwin T.....Rockville Centre
Miller, Benjamin M.....Brooklyn
Miller, Ernest L.....Brooklyn
Miller, Joseph S.....Bronx
Moskowitz, Irving L.....Brooklyn
Mountain, Edward R.....Olean
Mullin, William G.....Brooklyn
Myers, Frank D.....Slate Hill
Myers, Harvey L.....Cedarhurst
Naples, Angelo S.....Northport
Nardi, Peter J.....Bronx
Nareff, Arthur A.....New York
Neichin, Sidney N.....Brooklyn
Neumark, Fritz D.....Brooklyn
Newbold, Thomas P. Jr.....Brooklyn
Newburger, Robert A.....New York
Newman, Ernest B.....Brooklyn
Nichols, Frederick L.....Clinton
Noonan, Charles E.....Rochester
Obremski, Mitchell A.....Syracuse
O'Brien, Kennedy W.....Astoria
Palitz, Leo S.....New York
Part, Louis.....New York
Passalacqua, Cosmo.....Brooklyn
Payn, Stephen B.....New York
Pease, George J.....Bronx
Pers, Benjamin E.....New York
Peters, Carey M.....Springvalley
Petruzzelli, Giuseppe A.....Dobbs Ferry
Pickard, Karl.....Brooklyn
Pilpel, Michael.....New York
Pinks, David K.....Bronx
Platou, Pedro L. W.....Brooklyn
Polivy, Charles.....Bronx
Pollet, Benjamin.....Brooklyn
Porcelli, Anthony J.....Bronx
Poritz, Hyman.....Staten Island
Priver, Julien.....New York
Proper, Theodore R.....Newburgh
Rabkin, Irving.....Brooklyn
Rackow, Leon L.....Northport
Ranno, Frederick S.....Canandaigua
Raymond, Robert W.....Albany
Redmond, Frank P.....Haverstraw

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Regal, Nathan.....New York
Renzi, Vincent A.....Rochester
Rich, Arthur J.....Brooklyn
Rich, John J.....New York
Richmond, Van R.....Syracuse
Ridall, Earle G.....Elmira
Rinaldi, Thomas A.....Schenectady
Riordan, James P.....Buffalo
Ritz, Norton D.....Brooklyn
Rogati, Gene S.....Bronx
Rose, Herman G.....New York
Rosen, James A.....New York
Rosenberg, Theodore.....Bronx
Rosenfeld, Joseph E.....Wassaic
Rosenstein, Abraham I.....New York
Rothenberg, Paul A.....Brooklyn
Rothschild, Edmund S.....Springville
Rubin, Emanuel.....Canandaigua
Rubinger, Joshua H.....New York
Rudensky, Herman.....Bronx
Safian, Alfred W...Rockaway Park, L. I.
Salmon, Pierre J.....Brooklyn
Samuels, Irving L.....Mt. Vernon
Sandbank, Karl E.....Brooklyn
Sandler, Morris.....Brooklyn
Sanders, Elmer Key.....New York
San Filippo, Carmelo C.....Brooklyn
Sargent, Emanuel N.....Brooklyn
Saxton, Alton J.....Batavia
Scham, Manuel J.....Bronx
Schiffman, William I.....Brooklyn
Schlesinger, Robert W.....Rego Park
Schloss, Lewis J.....New York
Schneider, Julius.....New York
Schnur, Bernard M.....Yonkers
Schlopp, Sylvan S.....Rochester
Schoolnik, Benjamin H.....Brooklyn
Schwalbe, Milton I.....New York
Schwartz, Emanuel.....Brooklyn
Seideman, Thomas.....Brooklyn
Selkirk, George H.....Buffalo
Shapiro, Joseph.....Long Island City
Shapiro, Morris A.....Schenectady
Shapiro, Nathan A.....Woodside
Sheinmel, Archie.....Yonkers
Sherman, Abraham A.....New York
Shields, Charles D.....Buffalo
Shulman, Harold.....New York
Silberblatt, John M.....Cedarhurst
Silver, Solomon.....New York
Silverberg, Morris N.....Brooklyn
Simmons, George.....New York
Siragusa, Nino.....Bronx
Sisson, Reade S.....West Berne
Smith, Stanley E.....Plattsburg
Sobel, Robert A.....New York
Somberg, Nathan.....New York City
Squires, Charles D.....Binghamton
Squitieri, Salvatore P.....Bronx
Stabile, Anthony V.....Amityville
Staciva, Stanley J.....Northport
Steckel, Sidney S.....Bronx
Stein, Isidore.....Brooklyn
Sternbergh, W. C. A.....Clifton Springs
Straus, Bernard.....Brooklyn
Swirsky, Leo J.....Brooklyn
Thurm, Arthur S.....Brooklyn
Trachtenberg, Israel.....Brooklyn
Troy, Jack M.....New York
Urusky, Walter.....New York
Vernou, Eugene R.....Rochester
Vigilante, Michael.....Forest Hills
Villani, Sebastian J.....New York
Volan, Howard H.....Syracuse
Vrooman, Carl O.....Mt. Vernon
Walters, Henry W.....Summount
Wecksell, Irving.....Brooklyn
Weinstein, Irvine.....New York
Weintraub, Henry J.....Brooklyn
Weisz, Emery.....New York
Wheeler, Edward M.....Forest Hills
Wiener, Marcus.....Brooklyn
Wiesel, Leon L.....Brooklyn

New York—Continued

Willner, Herman H.....Ogdensburg
Wilner, Abraham S.....New York
Wiltchik, Isidore.....Brooklyn
Winter, Samuel S.....New York
Wise, Carl R.....New York
Wishner, Milton I.....Bronx
Wolf, Irving.....New York
Wolfson, Samuel.....Brooklyn
Wood, Marshall H.....Ossining
Wool, Leo S.....Brooklyn
Wright, Henry C.....Douglaston
Zane, Manuel D.....Bronx
Zerlin, Isidore.....Brooklyn

North Carolina

Clark, Harold S.....Asheville
Eller, Joseph J.....Warrensville
Flythe, William H.....High Point
Franklin, Robert B. C.....Mt. Airy
Mickley, John H.....Tabor City
Mitchell, Landis P. Jr.....Spindale
Wheeler, Raymond M.....Sanford
Wilson, Stephen G.....Angier

North Dakota

Fulton, Alfred M. Jr.....Minot
Gislason, Gerhard J.....Grand Forks

Ohio

Brogan, Austin J.....Dayton
Bruce, Robert A.....Tiffin
Cross, Robert R.....Toledo
Denning, Francis J.....Steubenville
Dennis, Gerald H.....Dayton
De Jak, John J.....Cleveland
Deucher, Richard G.....Cleveland
Diller, Weldon E.....Rawson
Eddy, Howard C.....University Heights
Gallagher, John E.....Rossford
Garner, Amos D.....Dayton
Geiser, Edward J.....Cheviot
Goodman, Sander.....Cincinnati
Gotz, Alexander.....Toledo
Greenfield, Jack.....Cleveland
Greenson, Walter I.....Toledo
Gruber, Adolph A. Jr.....Cincinnati
Hagg, Oliver J.....Perrysburg
Hamann, Carl A.....Shaker Heights
Hargrave, Dudley W.....Cincinnati
Harris, Michael A.....Cleveland
Harris, William B.....Columbus
Hart, James R.....Cleveland
Haydon, George B.....Cincinnati
Hendricks, Anthony B.....Cincinnati
Himmel, Jacob G.....Cleveland Heights
Hull, Bradley.....Cleveland
Hullinger, Clarence W.....Springfield
Hunter, Howard M.....Hamilton
Hyman, Morris.....Cincinnati
Jacka, Edwin R.....Bryan
Kessler, Edwin S.....Cleveland Heights
Kessler, Saul W.....Cleveland
Kirk, Robert C.....Columbus
Kirkendall, Edward T.....Columbus
Koch, Carl A.....Cincinnati
Kogut, Lewis V.....Cleveland
Marsh, Carl D.....Springfield
Martin, James F.....Cincinnati
Matson, John W.....Uhrichsville
Melaragno, Umbert A.....Dayton
Meschan, Isador.....Cleveland
Meyers, John S.....Versailles
Miller, James D.....Youngstown
Moore, Randolph P.....Cleveland
Moorehead, James R.....Seville
Mumma, Charles E.....Dayton
Murphy, Dennis J.....Chillicothe
Neese, John.....Mt. Victory
Nicholson, Owen J.....Norfolk
Noll, John Jr.....Youngstown
Osborne, Johnston F.....Youngstown
Peirce, Wilmot W.....Mansfield
Pliskin, Reubin R.....Akron

Ohio—Continued

Pocotte, Robert W.....Toledo
Prata, Michael.....Chillicothe
Pulford, Dayton T.....Toledo
Pumphrey, Gordon H.....Mount Vernon
Rath, Albert E.....Wooster
Rhodes, Marvin P.....Dayton
Robart, Wilbur C.....Akron
Ruegsegger, Franklin McG...Brecksville
Sachs, Edward W.....Dayton
Sauvageot, John P.....Akron
Schoolfield, Clarence B..Upper Sandusky
Schumacher, Edward E.....Sandusky
Shoupe, Thomas R.....Findlay
Silberstein, Jack S.....Columbus
Smart, James A.....Dayton
Smith, Paul W.....Lorain
Smith, Trent W.....Cincinnati
Stanton, Eugene J.....Elyria
Stiles, Henry T.....Mansfield
Stoops, Jean T.....Cincinnati
Tecklenberg, Roger L.....Lima
Thomas, Lester C.....Lima
Tschantz, Robert E.....Canton
Voorhis, Charles C.....Cleveland
Waltz, Harold D.....Sandusky
Weiss, Louis L.....Canton
Wiggers, Russell F.....Cincinnati
Wilcox, Abbott Y. Jr.....Cincinnati
Wilson, Rex H.....Akron
Winston, Paul B.....Cincinnati
Wissman, William L.....Columbus
Wood, Benjamin J.....Cleveland
Yauger, George W.....Dayton

Oklahoma

Beattie, James W.....Oklahoma City
Brocksmith, Henry A.....Tulsa
Fryer, Samuel R.....Oklahoma City
Maril, William D.....Oklahoma City
Mengel, Chester K.....Muskogee
Mogab, John H.....Enid
Sinclair, Franklin D.....Tulsa
Veazey, Lyman C.....Ardmore
Wright, Jack M.....Stillwater

Oregon

Lowell, Lawrence M.....Astoria
Woodward, Don E.....Portland

Pennsylvania

Albright, Dill J.....Lehigh County
Almasy, Louis E.....New Kensington
Barone, Andrew M.....Pittsburgh
Brav, Ernest A.....Philadelphia
Burket, Louis C.....Altoona
Chodoff, Paul.....Philadelphia
Cicione, Edward T.....Philadelphia
Corsello, Whitney C.....Pittsburgh
Cortellini, Mario J.....Bethlehem
Davie, John H.....Wynnewood
Davies, Frederic B.....Scranton
Decker, Douglass A.....Allentown
Deily, Raymond E.....Bethlehem
Dodd, Stephen I.....Philadelphia
Dotterer, John E.....State College
Duncan, George G.....Philadelphia
Feder, Samuel L.....Philadelphia
Flom, David M.....Pittsburgh
Forman, Joseph E.....Philadelphia
Glushien, Arthur S.....Pittsburgh
Goldman, Milton S.....Pittsburgh
Gombar, Edward F.....Thropp
Graham, George G.....Butler
Greenlee, Daniel P.....Pittsburgh
Grenfell, Raymond F.....Wilson
Guay, Andrew J. L.....Allentown
Gutmaker, Hyman R.....Philadelphia
Hager, George W. Jr.....Munhall
Hanna, Edward A.....Philadelphia
Hanover, Bernard.....McKees Rocks
Heinrich, Ward D.....Pittsburgh
Hodges, Horace H.....Philadelphia
Jacques, William A.....Ashland

PHYSICIANS SEPARATED FROM SERVICE

Pennsylvania—Continued

Johnson, Elden T.....Ambridge
Kahl, Harold T.....Johnstown
Kallen, Morris N.....Philadelphia
Kelly, James J.....Darby
Koenig, Arthur R.....Pittsburgh
Kohler, Carl W.....Pittsburgh
Konecke, Maximilian L....Wilkes-Barre
Lee, Rotan.....Philadelphia
Lerman, Lee R.....Milton
Leydic, C. Clark Jr.....Natrona
Lichtman, Jacob F.....Philadelphia
Long, Esmond R.....Wayne
McDivitt, Marcus D.....Pittsburgh
McDonald, Herbert M.....Dunmore
McMillan, Donald L.....Glenshaw
Marshall, David S.....Drexel Hill
Marshall, Luther McL.....Geneva
Mattleman, Nathan.....Philadelphia
Mervine, Ned D.....Meadville
Meyers, Paul T.....Johnstown
Michaels, Bernard I.....Pittsburgh
Morgan, David R.....Philadelphia
Morgan, Phillip J.....Kingston
Morgan, William R. Jr.....York
Moss, Vassar Y. Jr.....Canonsburg
Mussina, Henry B.....Williamsport
Nairn, Robert R.....Pittsburgh
Neill, John L. McV.....Smethport
Oliver, Adlai S. Jr.....Bryn Mawr
Oller, Samuel.....Philadelphia
Pantalone, Frank A.....Crabtree
Parmet, Morris.....Allentown
Patton, Anna M.....Pittsburgh
Paul, Hugo B.....Sewickley
Pennock, Lazarus L.....Pittsburgh
Posatko, Peter C.....Plains
Pottash, Ruben R.....Philadelphia
Prestileo, Frank G.....Pottsville
Pugliese, August A.....Leechburg
Pullen, Lee.....Pittsburgh
Radbill, Samuel X.....Philadelphia
Redcay, Robert A.....Ephrata
Romig, John E.....Duncannon
Roth, Edward.....Donora
Rush, Irving A.....Philadelphia
Ryan, James J.....Wayne
Sanford, Frederic E.....Sayre
Schmitt, Charles L.....Pittsburgh
Scholl, Harvey W.....East Greenville
Schwalm, Ralph I.....Schuykill County
Shepler, Joseph R.....West Newton
Shields, Edward A.....Bedford
Shrader, Lester C.....Wilmerding
Sieber, William K.....Pittsburgh
Siegal, Edward I.....Philadelphia
Sissman, Paul R.....Pittsburgh
Slease, Cyrus B.....Elderton
Slesinger, Hyman M. A.....Windber
Slone, Jacob.....Pittsburgh
Smith, Russell C.....Upper Darby
Staab, Anthony J.....Allison Park
Stanford, Stephen R.....Norristown
Stirling, James W.....Bellevue
Stotler, Charles W.....Johnstown
Stroud, Morris W. III.....Philadelphia
Supowitz, Saul.....Shenandoah
Tallman, Edwin H.....Lebanon
Tananis, Anthony A.....Minersville
Task, Jacob K.....Philadelphia
Toton, John S.....Philadelphia
Truitt, George W.....Chadds Ford
Veri, Frank A.....Lancaster
Wainer, Amos S.....Philadelphia
Weber, John I.....Philadelphia
Weber, Van Burchfield Jr.....Pittsburgh
Weinberg, Jacob D.....Philadelphia
Wicks, William A.....W. Pittston
Wolfe, Eugene F.....Shickshinny
Wonsettler, Donald E.....Scenery Hill
Wood, Charles T.....Prospect Park
Zappacosta, Frank H.....Philadelphia
Zogby, Albert J.....Hazelton

Rhode Island

Badway, Joseph M.....Providence

South Carolina

Bates, Perry T.....Greenville
Hinson, Angus.....Rock Hill
Josey, Allen I.....Columbia
La Roche, William R. Jr.....Charleston
Madden, John H. M.....Columbia
Martin, Walter D.....Mullins
Pittman, John G. Jr.....Gaffney
Poole, Everett B.....Greenville
Poole, Harold L.....Spartanburg
Poole, Pierre P.....Cross Anchor
Poole, Robert E.....Spartanburg
Reynolds, Dallas B.....Columbia
Rhodes, Louis D.....Estill
Rice, Earle M.....Charleston
Scurry, Gerald W.....Chappels
Waring, Ancrum Jr.....Summerville

South Dakota

Eagan, John C.....Dell Rapids
McKie, John F.....Hot Springs

Tennessee

Henshall, George K. Jr.....Chattanooga
Lesher, John H.....Knoxville
McKenzie, Eugene E.....Memphis
Milligan, Frank L.....Jefferson City
Moore, Herbert R.....Fountain City
Page, Alfred H.....Memphis
Rucker, Norman H.....Luttrell
Tipton, William M.....Knoxville
Watkins, William W.....Memphis

Texas

Arnold, Hiram P.....Hemphill
Bailey, Noel R.....Fort Worth
Barshay, Bernard.....Kerrville
Blair, Drury S.....Dallas
Bloom, Bernard H.....San Antonio
Brannon, Jack G.....Houston
Carrico, Carl C.....Houston
Candy, William M.....Houston
Cooper, Samuel S.....Austin
Edwards, Thomas G.....McGregor
Estes, Jack M.....Abilene
Frink, Berton F.....Corrigan
Fromm, Charles S.....Dallas
Giessel, Julius W.....Eagle Lake
Harrison, Albert W.....Woodville
Hestand, Haskell E.....Odessa
Johnson, Malcolm L.....Paris
Kearney, William W.....El Paso
Kennedy, John C.....Galveston
Lancaster, Lifford R.....Ganado
Mendell, David.....Houston
Morgan, William H.....Fort Worth
Murphy, Weldon O.....Amarillo
Nicholson, Harold E. Jr.....Wheeler
Nicosia, Ralph V.....Houston
Nobles, Millard W.....Amarillo
Park, Barton E.....Dallas
Pence, Ludlow M.....Dallas
Pucie, Charles R.....Kerrville
Puckett, Howard E.....Amarillo
Schiffer, Sydney.....San Antonio
Sehested, Herman C.....Tyler
Smith, Joseph R.....Amarillo
Thompson, George W.....Texarkana
Thorning, William B. Jr.....Houston
Wall, John A.....Houston
Wilhite, Hilton R.....Hillsboro
Winans, Henry M.....Dallas
Witten, Thomas A.....Galveston

Utah

Hess, Wallace E.....Bountiful
Moskowitz, Simon L.....Brigham City
Preston, Richard A.....Logan
Skolfield, Mazel.....Salt Lake City
Van Orden, Max T.....Salt Lake City

Vermont

Coombs, Francis P.....Brattleboro
Paterson, Robert G.....East Crafsbury
Ryan, Harry R. Jr.....Rutland
Thayer, John E.....Burlington
Warshawsky, H...White River Junction
Williams, John R.....Fair Haven

Virginia

Chase, William D.....McLean
Cox, Samuel C.....Richmond
Harris, William H. Jr.....Richmond
Jonas, Adolphe D.....Newport News
McCullough, Robert W....Charlottesville
Malan, Wallace H.....Dublin
Martin, Charles B.....Nokesville
Plummer, Kemp.....Petersburg
Price, Henkel M.....Martinsville
Rawles, Benjamin W. Jr.....Richmond
Smith, George H.....Winchester
Switkes, Herman I.....Hampton
Terrell, Robert V.....Richmond
Volpe, James Jr.....St. Charles

Washington

Baker, William Y.....Seattle
Deagen, James R.....Walla Walla
Diamond, Leon S.....American Lake
Emmel, Harry E.....Seattle
Franke, Frederick A.....Everett
Hackedorn, Howard M.....Seattle
Hardy, William H.....Aberdeen
Hartwell, Donald C.....Takoma Park
Hutchinson, Russell E.....Vancouver
Johnson, Philip O. C.....Seattle
Keyes, Roswell P.....Bellingham
Linkletter, Arthur C.....Shelton
Martin, Carl L.....Skykomish
Narodick, Benjamin G.....Seattle
Ostrom, Linus B.....Seattle
Richardson, Howard L.....Tacoma
Tsapralis, Paul C.....Seattle
Snyder, Merle B.....Chewelah
Warner, Oliver M.....Walla Walla
Wollenweber, Ernest J.....No. Seattle

West Virginia

Bock, Robert C.....Charleston
Bruce, Thomas H.....New Cumberland
Buffington, Carroll B.....Wheeling
Gaskel, Jerome C.....Williamson
Hash, John W.....Charleston
Huffman, Jacob C.....Buckhannon
Humphries, Robert T.....Clarksburg
Lawson, William T.....E. Fairmont
Levine, Morris H.....Huntington
Martin, Walter B.....Huntington
Meek, Edwin McL.....Huntington
Mertz, Philip.....Huntington
Mintz, Emanuel.....Sistersville
Polsue, William C.....Charleston
Shortridge, Wilson P.....Morgantown
Stone, John E.....Bluefield

Wisconsin

Allin, Robin N.....Madison
Armbruster, John L.....Milwaukee
Dibble, Howard C.....Portage
Earney, Lyman J.....La Crosse
Heller, Theodore A.....Milwaukee
Leveroos, Edward H.....Superior
Smith, Robert W.....Milwaukee

Wyoming

Bennett, Edward R.....Sheridan
Harris, Richard L.....Sheridan
Steele, Ashby.....Cheyenne

Puerto Rico

Lugo, Anibal L.....Santurce

Canada

Novinger, George T.....Montreal

ORGANIZATION SECTION

REBATES ON EYEGLASSES

(There follow condensations made by the Bureau of Legal Medicine and Legislation of two complaints filed by the United States in the District Court of the United States for the Northern District of Illinois, Eastern Division, July 23, 1946, against the defendants named therein charging violations of the Sherman Antitrust Act.)

Complaint in Civil Action No. 46C—1332

The complaint names the following defendants: Bausch & Lomb Optical Company; certain "affiliates" of that company, namely Riggs Optical Company-Consolidated, Chicago, Riggs Optical Company, Inc., San Francisco, McIntire, Magee & Brown Company, Philadelphia, and Southeastern Optical Company, Inc., Richmond, Va.; Irving F. Barnett, M.D., Chicago; Charles H. Piper, M.D., Chicago; C. K. Gabriel, M.D., Quincy, Ill.; James E. Thiell, M.D., Rockford, Ill.; D. H. O'Rourke, M.D., Denver; James P. Rigg, M.D., Grand Junction, Colo.; Wayne J. Foster, M.D., Cedar Rapids, Iowa; Frank H. Reuling, M.D., Waterloo, Iowa; Henry A. Bender, M.D., Waterloo, Iowa; Morton E. Brownell, M.D., Wichita, Kan.; L. F. Lorio, M.D., Baton Rouge, La.; Hyder F. Brewster, M.D., New Orleans; Sam Charles Cohn, M.D., New Orleans; L. W. Gorton, M.D., Shreveport, La.; G. L. Doxey, M.D., Minneapolis; Robert R. Tracht, M.D., St. Paul; A. W. McAlester, M.D., Kansas City, Mo.; Lyman H. Heine, M.D., Fremont, Neb.; William Howard Heine, M.D., Fremont, Neb.; J. J. Hompes, M.D., Lincoln, Neb.; William P. Haney, M.D., Omaha; William H. Morrison, M.D., Omaha; Edward C. Matthews, M.D., Albuquerque, N. M.; Franklin P. Schuster, M.D., El Paso, Texas; Stephen A. Schuster, M.D., El Paso, Texas; William A. Reily, M.D., San Antonio, Texas; Atras E. Jackson, M.D., Fort Worth, Texas; Speight Jenkins, M.D., Dallas, Texas; Mark E. Nesbit, M.D., Madison, Wis., and Raymond C. Warner, M.D., Milwaukee.

Individuals designated as defendants, the complaint states, "are fairly and adequately representative of a class of persons so numerous [estimated by the complaint as "upward to three thousand"] as to make it impracticable to bring all of them before the court; and against whose members the character of right sought to be enforced is several, and there are common questions of law and fact affecting their several rights and a common relief is sought against all the members of the class." The class of persons made defendants, of whom the individual defendants listed are members and are fairly and adequately representative, the complaint alleges, have the following things in common: All are oculists who regularly make ophthalmic refractions for their patients and prescribe ophthalmic lenses for the patients' eyes, all regularly charge patients a professional fee, all have signed letters designating a defendant "affiliate" to act as the oculist's "agent" in selling spectacles, and parts thereof, to the patient on prescription, all have signed schedules setting forth retail prices to be charged patients of the oculist by defendant "affiliate," all have patients who take their prescriptions for ophthalmic lenses to a defendant affiliate, and all receive and accept from a defendant affiliate rebates or "credits" of part of the purchase price paid by patients for spectacles and parts thereof.

The complaint charges that ever since 1938 the defendants have been engaged in a continuing and unlawful combination and conspiracy to fix the consumer price of spectacles sold to patients of defendant doctors, in restraint of interstate trade and commerce in such spectacles and in violation of section 1 of the Sherman Antitrust Act. This combination and conspiracy, the complaint charges, has consisted of a continuing agreement, understanding and concert of action among the defendants, the substantial terms of which have been:

(*a*) That the defendant affiliates, through their dispensing branches and with the authorization of the defendant Bausch & Lomb, sell spectacles and parts thereof on prescription directly to the patients of defendant physicians and collect a consumer price therefor from such patients which "shall be the sum of the ℞ or prescription price of the spectacles or parts thereof plus a fitting fee plus a substantial amount for a rebate or 'credit' to the defendant doctor who prescribed for the patient";

(*b*) That the total price to be charged patients of defendant doctors by a dispensing branch of any defendant affiliate shall be "at least as high as the local prevailing consumer prices charged by optometrists and retail opticians for spectacles or parts thereof of equivalent quality";

(*c*) That the defendant affiliates, with the authorization of defendant Bausch & Lomb, rebate to or "credit" defendant doctors with the difference between the ℞ or prescription price plus fitting fees and the prices collected from such patients by defendant affiliates, and that defendant doctors accept such rebates or "credits," which are customarily approximately one half of the consumer price collected from the patient;

(*d*) That the defendant affiliates, with the authorization of Bausch & Lomb, boycott and refuse to sell spectacles and parts thereof to patients of doctors who refuse to accept rebates, turn over rebates to their patients or insist that consumer charges made to their patients by defendant affiliates be reduced by the amount of the rebate which would otherwise be paid to the doctor; and

(*e*) That the defendants refrain from disclosing to patients of defendant doctors the ℞ or prescription prices of spectacles or parts thereof, the fact that the prices charged to said patients by the defendant affiliates include an amount which is rebated to said defendant doctors, or the amount of such rebate.

By reason of this combination and conspiracy, the complaint alleges that the acts done in furtherance thereof have had the following effects: (*a*) Arbitrary and inflated consumer prices for spectacles and parts thereof have been fixed and maintained; (*b*) patients of defendant doctors have been forced to pay for spectacles or parts thereof consumer prices which have been inflated by the amount of the rebates or credits given by the defendant affiliates to the defendant doctors; (*c*) rebates or credits have been paid to defendant doctors which amount on the average to approximately one-half the consumer price paid by patients of defendant doctors to defendant affiliates for spectacles or parts thereof; (*d*) defendant doctors have acquired a pecuniary interest in maintaining the price of spectacles and parts thereof at excessive and artificial levels, notwithstanding that defendant doctors have already received fees from their patients for professional services rendered; and (*e*) interstate trade and commerce in spectacles and parts thereof has been unreasonably restrained in violation of section 1 of the Sherman Antitrust Act.

Attached to the complaint is schedule A reflecting "representative transactions" involving the sale of spectacles or parts thereof by a defendant affiliate to patients of defendant doctors, indicating in each instance the consumer price collected from patients, the prescription price including fitting fee, and the rebate or credit paid to defendant doctors. Schedule B, also attached, reflects rebates or credits paid to defendant doctors during 1944 by defendant affiliate Riggs Optical Company-Consolidated of Chicago, totaling $307,550.46.

The complaint asks that (1) the practices described in it be declared to be unlawful and that the agreements and understandings alleged in the complaint be adjudged and decreed to

be in violation of the Sherman Antitrust Act; (2) that the defendant Bausch & Lomb, the defendant affiliates and their respective officers, employees, representatives and agents be enjoined perpetually from directly or indirectly making any rebates or granting any credits to doctors "for spectacles or parts thereof purchased on prescription, whether such rebate or 'credit' is given directly as by cash or check or is given indirectly by applying the amount of the rebate or 'credit' against the purchase by the oculist of stock or equipment, or by payment to a charity or other person or organization designated by the doctor, or by any other method"; (3) that defendant doctors be enjoined perpetually from participation in any plan or program with any wholesaler under which said doctors receive, directly or indirectly, any part of the purchase price of spectacles or parts thereof sold by said wholesalers to patients of said doctors; (4) that the defendant affiliates, for a period of three years from the entry of the decree in this case, be enjoined, as to their branches doing dispensing at the time the complaint was filed, from refusing to sell spectacles or parts thereof on prescription for cash to the patients of any doctors at the defendant Bausch & Lamb or affiliate prescription prices, plus the fitting fee prevailing at the dispensing branch at the time the complaint was filed; (5) that the defendant Bausch & Lomb and the defendant affiliates be perpetually enjoined from refusing to make stock and ℞ or prescription sales of spectacles and parts thereof to doctors who, in doing their own dispensing, sell spectacles or parts thereof to their patients at less than the local prevailing level of consumer prices charged by optometrists; (6) that, pursuant to section 5 of the Sherman Act, an order be made requiring such defendants as are not within the district in which the complaint was filed to be brought before the court as parties defendant, and directing the marshals of the districts in which they severally reside to serve summons on them; (7) that the plaintiff have such further, general and different relief as the nature of the case may require and the court may deem proper in the premises.

Complaint in Civil Action No. 46C-1333

This complaint names the following defendants: The American Optical Company, an association, and the American Optical Company, a corporation wholly owned and controlled by the association; Noah Fox, M.D., and G. H. Mundt, M.D., Chicago; A. J. Blickenstaff, M.D., Peoria, Ill.; Steve A. O'Brien, M.D., Mason City, Iowa; Loran M. Martin, M.D., Herman C. Kluever, M.D., and Charles H. Coughlin, M.D., all of Fort Dodge, Iowa; Frank C. Boggs, M.D., Topeka, Kan.; M. E. Brownell, M.D., Wichita, Kan.; W. O. Quiring, M.D., Hutchinson, Kan.; J. D. Woolworth, M.D., Shreveport, La.; N. T. Simmonds, M.D., Alexandria, La.; E. J. Curran, M.D., Kansas City, Mo.; Joseph S. Summers, M.D., Jefferson City, Mo.; William Orlando Smith, M.D., Tulsa, Okla.; John J. Crume, M.D., and Frederick J. Crumley, M.D., Amarillo, Texas; Bernard B. Friedman, M.D., Corpus Christie, Texas; Fred R. Landon, M.D., Wichita Falls, Texas; H. J. Heeb, M.D., Milwaukee; Reinhold O. Ebert, M.D., Oshkosh, Wis., and Erwin W. Newman, M.D., Cheyenne, Wyo.

As in the case of the complaint filed in Civil Action No. 46C-1332, the individuals designated as defendants are described as representative of a class so numerous as to make it impracticable to bring them all into court, and the complaint requests relief against all members of the class. It alleges that "the defendant American, through its dispensing branches, fills prescriptions for patients of upward to three thousand oculists in the foregoing class, with each of such oculists receiving and accepting rebates or 'credits' from the defendant American on account of ophthalmic goods sold to the patients of such doctors."

The complaint charges a combination and conspiracy on the part of the defendants to violate the Sherman Antitrust Act effectuated by specified means and methods. During the period covered by the complaint, is is alleged, the defendant American entered into agreements with defendant doctors to (*a*) maintain the consumer price of spectacles and parts thereof sold by it to patients of defendant doctors, at levels at least as high as the prevailing local level of consumer prices charged by optometrists and retail opticians; and (*b*) conceal from consumer purchasers the fact that consumer prices are fixed at levels high enough to enable the defendant American, as vendor, to give defendant doctors rebates of approximately one-half the consumer price paid by their patients. The defendant American, it is further alleged, has entered into agreements and understandings with defendant doctors under which it has agreed through its dispensing branches (1) to fill prescriptions for lenses brought in by patients of the defendant doctors; (2) sell such patients spectacles and parts thereof under such prescriptions; (3) establish, for each dispensing branch of defendant American, consumer prices which would be substantially uniform for the patients of all defendant doctors served by the branch, be at least as high as the prevailing local level of consumer prices charged by optometrists and retail opticians for spectacles and parts thereof of equivalent quality, and be sufficiently high to include a substantial rebate or "credit" to the defendant doctor who prescribed for the patient, which rebate would be approximately one half of the consumer price charged to the patient; (4) refuse to charge patients of any doctor a consumer price which does not include a substantial sum for rebate to the doctor in addition to the ℞ or prescription price plus a fitting fee; (5) collect said consumer prices from patients of defendant doctors; (6) rebate to or "credit" the prescribing doctors with the amounts so collected from their patients in excess of the ℞ or prescription price plus a fitting fee; (7) keep secret from the patient the ℞ or prescription price of the spectacles or parts thereof purchased by the patient under prescription, the fact that the prices charged such patient include an amount which is rebated to the defendant doctors, and the amount of such rebate.

The defendant doctors, the complaint charges, have entered into agreements and understandings with the defendant American under which they have agreed (1) to refer patients to dispensing branches of the defendant American to have their prescriptions filled or to recommend the defendant American to their patients for such purpose; (2) accept from the defendant American a rebate or "credit" of the excess above the ℞ or prescription price plus fitting fee collected by the defendant American from patients of prescribing defendant doctors; (3) refrain from turning such rebates over to their patients; and (4) refrain from disclosing to their patients the ℞ or prescription price of spectacles or parts thereof purchased from the defendant American.

The complaint alleges that the defendant American supplies each defendant doctor with a detailed statement concerning each sale made to each patient, on prescription, such statement providing the name of the patient, a description of the ophthalmic goods sold, the ℞ or prescription price of such goods, the fitting fee, the consumer price collected from the patient and the amount of rebate or "credit" due the defendant doctor on account of such sale. Periodically the defendant American settles its accounts with defendant doctors by sending them checks for accrued rebates or by crediting such accrued rebates against the purchase of equipment or stock by the defendant doctors. All these activities, it is alleged, have resulted in arbitrary and inflated consumer prices for spectacles, forcing patients of defendant doctors to pay consumer prices which have been inflated by the amount of the rebates or "credits" given to the defendant doctors and have constituted an unreasonable restraint on interstate trade and commerce in spectacles and parts in violation of section 1 of the Sherman Antitrust Act.

The complaint concludes with a prayer for an injunction, as did the complaint in Civil Action No. 46C-1332, perpetually enjoining both the defendant American and the defendant doctors from granting or receiving, directly or indirectly, any rebates or "credits" in connection with the sale of spectacles or parts thereof on prescription.

Attached to the complaint is schedule A, setting forth representative transactions involving the sale of spectacles or parts thereof by a dispensing branch of defendant American to patients of defendant doctors, showing the date of sale, the consumer price collected from patients, the ℞ or prescription price (including fitting fee) and the rebate or "credit" paid to a defendant doctor. Attached also is schedule B, reflecting the rebates or "credits" paid by defendant American during 1944 and 1945 to defendant doctors named in the complaint, the total being $277,676.38.

Washington Letter

(From a Special Correspondent)

July 29, 1946.

House Rejects $100,000,000 Cancer Control Program

The House of Representatives turned down the $100,000,000 cancer control program proposed by Representative Neely, Democrat of West Virginia. A roll call vote of 139 to 126 killed the measure after opponents called the legislation "loosely drawn" and likely to "promote chaos" in federal cancer research now under way. The bill sought authority for the President to mobilize the world's leading cancer experts and coordinate their efforts. Representatives Judd, Republican of Minnesota, and Bulwinkle, Democrat of North Carolina, were the chief critics, arguing that the work could be done just as well by expanding the present cancer program of the National Cancer Institute and the United States Public Health Service. Representative Neely defended the bill, declaring that during three years of the war 500,000 Americans died of cancer, as compared with 273,000 killed in battle. Quentin Reynolds, the magazine correspondent, appealed to Congress in large newspaper advertisements to pass the Neely bill, stating that 17,000,000 Americans are doomed to die of cancer unless action is taken.

Army Studies German "Hydraulic" and "Suction Socket" Artificial Limbs

Two new types of artificial limbs developed by German scientists and brought to the United States by a special army commission are being studied. Major Gen. Norman T. Kirk reports that a good start has been made on development of a hydraulic leg which permits near normal use of the artificial knee. Dr. Paul R. Hawley, medical director of the Veterans Administration, says that the agency has asked for blueprints and will conduct experiments on the hydraulic leg. The suction socket, which permits use of an artificial leg without the cumbersome pelvic belt commonly used in this country, is under study at the army prosthetic research laboratory at Walter Reed Hospital. Brig. Gen. Malcolm C. Crow, air surgeon, discovered the two German scientists, Dr. Ulrich K. Henschke, doctor of medicine and physics, and Hans A. Mauch, student of jet propulsion, while investigating German research in aviation medicine. He encouraged them to concentrate on the hydraulic leg they have devised.

Streptomycin Keported Promising for Treating Tuberculosis

Dr. Chester S. Keefer of the Evans Memorial Hospital, Boston, is reported as having told a meeting of streptomycin producers and Civilian Production Administration officials that experiments indicate that there is "increasing promise that the drug will be helpful in treating tuberculosis." Limited commercial distribution of the new "wonder drug" is to start September 1 under OPA supervision. Dr. Keefer handles civilian appeals for the drug under the limited allocation controlled by the National Research Council and he believes that streptomycin will supplement but not replace present methods of tuberculosis treatment. The use of the drug is restricted to research now, because of limited output. It is planned to issue the drug to selected hospitals throughout the country, which in turn will act as area depots.

Eighteenth Century Pharmaceutical Shop Goes to Smithsonian Institution

A reproduction of an eighteenth century apothecary shop, assembled by E. R. Squibb and Sons in 1932 and recently given to the American Pharmaceutical Association, has been placed on display behind plate glass windows in the Smithsonian Institution and has aroused considerable public interest.

House Committee Approves Free Cars for Amputees

Legless and armless veteran patients from Walter Reed and Forest Glen hospitals, who staged a spectacular "walk" on the Capital, were pleasantly surprised when the House Veterans Committee reported out a bill to provide free automobiles to ex-service men who suffered amputations above the knee and paralysis of the legs. The men want free cars for all leg amputees and the paraplegic suffering leg paralysis through spinal injury, and they are now taking their case to the Senate Finance Committee to extend scope of the measure. Although Gen. Omar N. Bradley, veterans administrator, opposed the bill on the ground that it established a new principle in rehabilitation of servicemen, the amputees contended that automobiles were as necessary as crutches, artificial limbs and motor scooters, now provided free by the Veterans Administration. Representative Edith Nourse Rogers, Republican of Massachusetts, first introduced a bill providing automobiles up to $1,500 in value for all veterans who lost a limb or use of a limb in the war, but a subcommittee killed the measure as too loosely worded.

National Hospital Improvement Program Approved by House

The House of Representatives has approved by a standing vote of 132 to 28 the bill providing for a five year program of national hospital improvement through $375,000,000 in federal grants to states for building and improving hospitals. A similar measure was passed by the Senate last December. The House has stipulated different methods of allocation, as a result of which the measure will go back to the Senate for further study. It may have to be considered in conference before it reaches the White House for signature.

House Committee Freezes Social Security Tax for Another Year

The House Ways and Means committee has decided to "freeze" for another year the 1 per cent tax on employers' payrolls and employees' pay for the social security old age insurance. The committee also cut out of its revision bill a provision for larger grants to low income states for benefits to needy aged persons, and blind and dependent children. This compromise action was taken to get a vote on the bill before the July 27 summer adjournment.

Representative May Introduces Medical Bills

Representative Andrew May, Democrat of Kentucky, chairman of the House Military Affairs Committee, who has been mentioned in the Mead Committee investigation of the Garsson munitions companies, introduced two bills covering medical phases of army reorganization. One bill would create a Medical Service Corps in the Army, and a second would establish the Army Nurse Corps, the Dietitian Corps, the Physical Therapist Corps and the Occupational Therapist Corps in the Army Medical Department.

Capital Hospital Council Studies Nurse and Staff Pay Scales

The newly formed National Capital Area Hospital Council has launched a study of pay scales of hospital nurses and staff personnel, according to William R. Castle, chairman. The council has voted to continue "under present circumstances" its admitting and bill collecting Health Security Administration, which the recent Metropolitan Health Survey called a "misfit" with no place in the local hospital organization.

Adventists' Medical Chief Takes New Post

Dr. Harold M. Walton has resigned as head of the medical department of the General Conference of Seventh Day Adventists to become medical superintendent of the White Memorial Hospital, Los Angeles.

Col. William E. Shambora, former chief surgeon of the army ground forces, has been assigned as commandant of the Army Medical Department Schools, Brooke Army Medical Center, Fort Sam Houston, Texas.

Dr. Edward H. Cushing Joins Veterans Medical Staff

Dr. Edward H. Cushing, associate clinical professor of medicine at Western Reserve, Cleveland, has been appointed chief of education in the Veterans Administration department of medicine and surgery. Veteran of both world wars, Dr. Cushing will supervise training of full time employees in veterans' hospitals and will work with deans' committees.

Greek-Americans Raise Funds for Hospital in Athens

The American Hellenic Educational Progressive Association has raised a million dollars toward erection of a thousand bed hospital in Athens which is to be the beginning of an American medical center there, reports Harris J. Booras of Boston, organization member.

PROCEEDINGS OF THE SAN FRANCISCO SESSION

MINUTES OF THE NINETY-FIFTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD IN SAN FRANCISCO, JULY 1-5, 1946

MINUTES OF THE SECTIONS

(Concluded from page 1070)

SECTION ON EXPERIMENTAL MEDICINE AND THERAPEUTICS

WEDNESDAY, JULY 3—MORNING

The meeting was called to order at 9:10 by the chairman, Dr. E. V. Allen, Rochester, Minn.

Dr. David Lehr, New York, read a paper on "The Prevention of Renal Complications by the Use of Sulfonamide Mixtures." Discussed by Drs. Windsor C. Cutting, San Francisco; Richard Whitehead, Denver, and David Lehr, New York.

Dr. George R. Herrmann, Galveston, Texas, read a paper on "Some Observations on Hypercholesterolemia and the Effects of Decholesterizing Agents." Discussed by Drs. Isidore Snapper, New York, and George R. Herrmann, Galveston, Texas.

Dr. Richard K. Richards, North Chicago, Ill., read a paper on "Tridione, a New Anticonvulsant Drug." Discussed by Drs. Robert B. Aird, San Francisco; William G. Lennox, Boston; John B. Doyle, Los Angeles; M. A. Perlstein, Chicago, and Richard K. Richards, North Chicago, Ill.

The following papers were read as a symposium on "Unusual Diseases":

Drs. George Baehr and Abou D. Pollack, New York: "Disseminated Lupus Erythematosus and Disseminated Scleroderma."

Dr. Isidore Snapper, New York: "Sarcoidosis of Boeck."

These two papers were discussed by Drs. L. Henry Garland, San Francisco; Paul O'Leary, Rochester, Minn.; Harold L. Arnold Jr., Honolulu, Hawaii; George Baehr, New York, and Isidore Snapper, New York.

Drs. Selim A. McArthur and Howard Wakefield, Chicago; "Observations on the Electrocardiogram Made During Experimental Distention of the Human Gallbladder." Discussed by Drs. N. C. Gilbert, Chicago; William J. Kerr, San Francisco, and Howard Wakefield, Chicago.

Dr. Elmer C. Bartels, Boston: "Thiouracil: Remission or Relapse of Hyperthyroidism After Discontinuing Its Use." Discussed by Mayo H. Soley, San Francisco; Willard O. Thompson, Chicago, and Elmer C. Bartels, Boston.

A nominating committee was appointed consisting of Drs. Wallace M. Yater, Washington, D. C.; Tinsley R. Harrison, Dallas, Texas, and E. V. Allen, Rochester, Minn.

THURSDAY, JULY 4—MORNING

The following officers were elected: chairman, Carl A. Dragstedt, Chicago; vice chairman, Walter Bauer, Boston; secretary, Dwight L. Wilbur, San Francisco; delegate, E. V. Allen, Rochester, Minn.; alternate, C. M. Gruber, Philadelphia; executive committee, Tinsley R. Harrison, Dallas, Texas; E. V. Allen, Rochester, Minn.; Carl A. Dragstedt, Chicago; representative to Scientific Exhibit, R. W. Wilkins, Boston.

The following papers were read as a symposium on "Treatment":

Dr. E. V. Allen, Rochester, Minn., read the chairman's address, entitled "The Challenge of Intravascular Thrombosis and the Clinical Use of Anticoagulants."

Dr. J. W. Conn, Ann Arbor, Mich., read a paper on "The Diagnosis and Management of Spontaneous Hypoglycemia." Discussed by Drs. Howard F. West and E. Kost Shelton, Los Angeles; Elmer L. Sevringhaus, Nutley, N. J.; Arthur A. Herold, Shreveport, La., and J. W. Conn, Ann Arbor, Mich.

Dr. Albert M. Snell, Rochester, Minn., read a paper on "The Management of the Jaundiced Patient, with Consideration of the Indications for Surgical Treatment." Discussed by Drs. Ralph Adams, Boston; Leon Goldman, San Francisco; Isidore Snapper, New York, and Albert M. Snell, Rochester, Minn.

Dr. Tom D. Spies, Birmingham, Ala., read a paper on "Proof of and Treatment of Vitamin Deficiencies in an Individual Case." Discussed by Drs. S. P. Lucia, San Francisco, and Tom D. Spies, Birmingham, Ala.

Dr. Monroe D. Eaton, Berkeley, Calif., read a paper on "Treatment of Diseases of Virus Origin." Discussed by Drs. Karl F. Meyer, San Francisco, and Monroe D. Eaton, Berkeley, Calif.

Dr. O. P. J. Falk, St. Louis, read a paper on "The Treatment of Coronary Artery Disease." Discussed by Drs. Arlie R. Barnes, Rochester, Minn.; E. Sterling Nichol, Miami, Fla.; Willaim J. Kerr, San Francisco, and O. P. J. Falk, St. Louis.

FRIDAY, JULY 5—MORNING

A joint meeting was held with the Section on Internal Medicine.

Drs. Hugh J. Morgan and John Hunt, Nashville, Tenn., presented a paper on "The Use of Streptomycin in Clinical Practice."

The papers of Dr. D. R. Nichols, Rochester, Minn. (presented in the Section on Internal Medicine on Thursday, July 4) and Drs. Morgan and Hunt were discussed by Dr. Hobart A. Reimann, Philadelphia; Col. Michael E. DeBakey, M. C., A. U. S.; Capt. Edwin J. Pulaski, Halloran General Hospital, Staten Island, New York; Drs. D. R. Nichols, Rochester, Minn., and Hugh J. Morgan, Nashville, Tenn.

Drs. Joseph Stokes Jr., John R. Neefe, J. G. Reinhold and Sidney Gellis, Philadelphia, presented a paper on "Recent Studies on Hepatitis." Discussed by Drs. Albert M. Snell, Rochester, Minn.; David A. Wood, San Francisco, and Joseph Stokes Jr., Philadelphia.

The following papers were read in a panel discussion on "Therapeutic Information Please," Dr. James A. Paullin, Atlanta, Ga., acting as moderator:

Dr. William J. Kerr, San Francisco: "What's New in Cardiovascular Disease."

Dr. C. C. Sturgis, Ann Arbor, Mich.: "What's New in Hematology."

Dr. Ernest C. Faust, New Orleans: "What's New in Tropical Medicine."

Dr. Walter C. Alvarez, Rochester, Minn.: "What's New in Gastroenterology."

Dr. Hobart A. Reimann, Philadelphia: "What's New in Infectious Disease."

Dr. Edward H. Rynearson, Rochester, Minn.: "What's New in Endocrinology."

Dr. E. W. Schultz, Stanford University, Calif.: "What's New in Virus Diseases."

Dr. Frank E. Adair, New York: "What's New in Cancer."

Dr. Philip S. Hench, Rochester, Minn.: "What's New in Arthritis."

SECTION ON PATHOLOGY AND PHYSIOLOGY

Wednesday, July 3—Afternoon

The meeting was called to order at 2:10 by the chairman, Dr. Virgil H. Moon, Philadelphia.

A nominating committee was appointed consisting of Drs. H. J. Corper, Denver; L. W. Larson, Bismarck, N. D., and James P. Tollman, Omaha.

The following papers were read as a symposium on "Renal Insufficiency in the Shock Syndrome":

Dr. E. T. Bell, Minneapolis: "Extrarenal Uremia and Tubular Disease of the Kidney."

Drs. A. C. Corcoran and Irvine H. Page, Cleveland: "Study of the Crush Syndrome and Posttraumatic Anuria."

Drs. P. C. Martineau and F. W. Hartman, Detroit: "Studies on the Kidney Associated with Severe Burns."

Dr. Virgil H. Moon, Philadelphia (chairman's address): "Renal Deficiency Associated with Shock."

These four papers were discussed by Drs. E. T. Bell, Minneapolis; A. C. Corcoran, Cleveland, and Virgil H. Moon, Philadelphia.

Drs. Charles R. Rein, New York, and John F. Kent, Washington, D. C., presented a paper entitled "A Study of the Incidence of False Positive Tests for Syphilis in Sporozoite-Induced Vivax Malaria." Discussed by Drs. Charles R. Rein, New York; Benjamin S. Kline, Cleveland, and Alfred S. Giordano, South Bend, Ind.

Thursday, July 4—Afternoon

The following papers were presented as a symposium on "Physiology of High Altitude Flight":

Captain A. R. Behnke (MC), U.S.N.R.: "Concepts Derived from Investigations Pertaining to High Altitude Flight."

Drs. W. L. Burkhardt, H. F. Adler, A. J. Atkinson and A. C. Ivy, Chicago: "Some Factors Which Affect the Incidence of Bends at Altitude."

Commander Howard R. Bierman (MC), U.S.N.R.: "Protection of Flying Personnel Against High Impact Forces."

On motion made by Dr. A. C. Ivy, Chicago, seconded by Dr. H. J. Corper, Denver, a vote of appreciation was extended to Commander Bierman.

Dr. Douglas R. Drury, Los Angeles: "The Effect of Continuous and Intermittent Pressure Breathing on Kidney Function." Discussed by Drs. A. C. Corcoran, Cleveland, and Douglas R. Drury, Los Angeles.

Dr. H. F. Helmholz Jr., Rochester, Minn.: "Clinical Applications of Aviation Physiology."

Drs. H. J. Corper and Maurice L. Cohn, Denver: "The Tubercle Bacillus and Fundamental Chemical and Antibiotic Action."

The following officers were elected: chairman, J. J. Moore, Chicago; vice chairman, Alvin G. Foord, Pasadena, Calif.; secretary, Frank W. Hartman, Detroit; delegate, L. W. Larson, Bismarck, N. D.; alternate, H. J. Corper, Denver; executive committee, Frank C. Mann, Rochester, Minn.; Virgil H. Moon, Philadelphia; J. J. Moore, Chicago; representatives to the American Board of Pathology, Drs. Richard Philip Custer, Philadelphia, and J. W. Kernohan, Rochester, Minn.

Friday, July 5—Morning

A joint meeting was held with the Section on Gastro-Enterology and Proctology. The proceedings are reported in the minutes of that section.

SECTION ON NERVOUS AND MENTAL DISEASES

Wednesday, July 3—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. Percival Bailey, Chicago.

Dr. Walter L. Bruetsch, Indianapolis, read a paper on "Rheumatic Brain Disease: Late Sequel of Rheumatic Fever." Discussed by Drs. Frederick P. Moersch, Rochester, Minn.; Nathan Malamud, San Francisco; N. W. Winkelman, Philadelphia; J. M. Nielsen, Los Angeles; Leopold Hofstatter, St. Louis, and Walter L. Bruetsch, Indianapolis.

Dr. James A. Evans, Boston, read a paper on "Reflex Sympathetic Dystrophy." Discussed by Drs. Geza de Takats, Chicago; Capt. W. K. Livingston (MC), U.S.N.R., and James A. Evans, Boston.

Drs. Theodore C. Erickson, Mabel G. Masten and Henry M. Suckle, Madison, Wis., presented a paper on "Complications of Penicillin Therapy in Meningitis and Brain Abscess." Discussed by Drs. Irving J. Sands, Brooklyn; Benjamin Boshes, Chicago; A. Earl Walker, Chicago, and Mabel G. Masten, Madison, Wis.

Dr. Harold C. Voris read a paper on "Surgical Aspects of Traumatic Subdural Hematoma." Discussed by Dr. A. W. Adson, Rochester, Minn.

Drs. Lewis J. Pollock and James G. Golseth, Chicago, Frank H. Mayfield, Cincinnati, Alex J. Arieff, Chicago, Capt. Y. T. Oester, M. C., A. U. S., and Dr. Erich Liebert, Chicago, presented a paper on "Spontaneous Regeneration of Severed Peripheral Nerves."

Thursday, July 4—Morning

Executive Session

The following officers were elected: chairman, Dr. Roland P. Mackay, Chicago; vice chairman, Dr. Louis Karnosh, Cleveland; secretary, Dr. Fred P. Moersch, Rochester, Minn.; delegate, Dr. Hans H. Reese, Madison, Wis.; alternate, Dr. R. Finlay Gayle Jr., Richmond, Va.; representative to Scientific Exhibit, Dr. A. B. Baker, Minneapolis; representatives to American Board of Psychiatry and Neurology, Dr. S. Spafford Ackerly, Louisville, Ky.; Dr. Lawrence Woolley, Atlanta, Ga.; representative to the American Board of Neurological Surgery, Paul C. Bucy, Chicago; executive committee, Drs. J. M. Nielsen, Los Angeles; Percival Bailey, Chicago; R. P. Mackay, Chicago.

The secretary, Dr. R. P. Mackay, Chicago, read a letter from the American Board of Psychiatry and Neurology reporting on the annual meeting of the board held in December, 1945.

Dr. Walter Freeman, Washington, D. C., stated that the board is undergoing further development and that his work had been turned over to Dr. Francis J. Braceland. He felt that in the future the candidate in psychiatry was assured of more reasonable and sympathetic treatment by the board than had been possible in the past. He reported that the new requirements were to be put into effect in 1948 and would require an individual to undergo three years of graduate training and two years of subsidiary experience.

Dr. Freeman further stated that the question of training in government hospitals, particularly veterans' hospitals, had been discussed, and temporary approval of the residence type of training in Veterans Administration hospitals had been given to quite a number of organizations.

By unanimous vote of the section, it was decided to discharge the Committee on Industrial Health.

Dr. H. Houston Merritt, New York, offered a resolution recommending to the Council on Medical Education and Hospitals that sanatoriums which have been or which wish to be approved for training be inspected and evaluated now and at subsequent five year intervals and that the service of a full time psychiatrist be secured to assist in this work. The motion was carried without dissent.

Dr. Frederick P. Moersch, Rochester, Minn., offered a resolution recommending that the Section on Nervous and Mental Diseases approve the suggestion of the American Board of

Psychiatry and Neurology on the advisability of restricting the term of service of its members to a maximum of eight consecutive years. The motion was carried without dissent.

Scientific Session

The following papers were read as a symposium on "Tropical Diseases":

Dr. Benjamin Boshes, Chicago: "Cerebral Manifestations During the Course of Malaria: Experience in Mediterranean Theater, World War II." Discussed by Drs. W. McD. Hammon, San Francisco; Meyer A. Zeligs, Oakland, Calif.; Cullen Ward Irish, Los Angeles, and Benjamin Boshes, Chicago.

Drs. Arnold P. Friedman, Charles Brenner and H. Houston Merritt, New York, presented a paper on "Management of Patients with Chronic Headache." Discussed by Drs. Charles D. Aring, San Francisco; J. M. Nielsen, Los Angeles; Samuel B. Hadden, Philadelphia; Walter Freeman, Washington, D. C.; Matthew T. Moore, Philadelphia; Foster Kennedy, New York, and Arnold Friedman, New York.

Dr. Walter F. Schaller, San Francisco, read a paper on "Psychoneurosis and Industry." Discussed by Drs. Israel S. Wechsler, New York; Foster Kennedy, New York, and Walter F. Schaller, San Francisco.

Dr. Matthew T. Moore, Philadelphia, read a paper on "Electroshock Therapy: A Reconsideration of Former Contraindications." Discussed by Drs. Lothar B. Kalinowsky, New York; Nathaniel W. Winkelman, Philadelphia; Walter Z. Bard, Los Angeles; Foster Kennedy, New York; W. J. Otis, New Orleans; Eugene Ziskind, Los Angeles; Douglas Goldman, Cincinnati; Benjamin Boshes, Chicago, and Matthew T. Moore, Philadelphia.

FRIDAY, JULY 5—MORNING

A joint meeting was held with the Section on Ophthalmology. The proceedings are reported in the minutes of that section.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

WEDNESDAY, JULY 3—MORNING

The meeting was called to order by the chairman, Dr. Clyde L. Cummer, Cleveland, at 9 o'clock.

Executive Session

Dr. George Lewis read his report as secretary and a member of the American Board.

Dr. Francis Lynch read the report on the Scientific Exhibit.

The chairman called on Dr. C. F. Lehmann for his report as the Representative of the Section in the House of Delegates of the American Medical Association. Dr. Lehmann stated that there was nothing to report on dermatology.

Dr. Dudley C. Smith reported for the nominating committee, the nominees to be voted on at the next session.

The chairman asked if there were other committees that wished to report and stated that resolutions could not be presented later than the regular executive session on the second day, when the officers are elected.

Scientific Session

Dr. Clyde L. Cummer, Cleveland, read the chairman's address, entitled "Leukoplakia (Leukokeratosis) of the Palate, Papular Form: Its Relation to the Use of Tobacco."

Dr. B. V. A. Low-Beer, San Francisco, read a paper entitled "The External Therapeutic Use of Radioactive Phosphorus." Discussed by Drs. C. Guy Lane, Boston; Hiram E. Miller, San Francisco; H. C. L. Lindsay, Pasadena, Calif., and B. V. A. Low-Beer, San Francisco.

Dr. Joseph C. Amersbach, New York, read a paper entitled "Treatment of Basal Cell Epithelioma by Injection of Tissue Extracts: A Further Report." Discussed by Drs. S. William Becker, Chicago; Clyde K. Emery, Los Angeles; Merlin T. R. Maynard, San Jose, Calif.; Herman Allington, Oakland, Calif., and Joseph C. Amersbach, New York.

Drs. John H. Lamb, Everett S. Lain and Phyllis E. Jones, Oklahoma City, presented a paper entitled "Actinomycosis of the Face and Neck." Discussed by Drs. George M. Lewis, New York; Fred D. Weidman, Philadelphia; D. Truett Gandy, Houston, Texas; William J. Morginson, Salt Lake City; C. Guy Lane, Boston; Stephen Rothman, Chicago, and John H. Lamb, Oklahoma City.

Drs. Louis A. Brunsting and H. L. Mason, Rochester, Minn., presented a paper entitled "Porphyria with Epidermolysis Bullosa: Report of a Case of the Tardive Congenital Type, with Demonstration of Latent Porphyria in a Sister of the Patient." Discussed by Drs. Cleveland J. White, Chicago; Maximilian E. Obermayer, Los Angeles; Ervin Epstein, Oakland, Calif.; Thomas S. Saunders, Portland, Ore., and Louis A. Brunsting, Rochester, Minn.

Drs. William R. Hill Jr. and Thomas D. Kinney, Boston, presented a paper entitled "The Cutaneous Lesions in Acute Meningococcemia, A Clinical and Pathologic Study." Discussed by Drs. Maurice J. Costello, New York; Hiram Newton, San Diego, Calif.; H. J. Templeton, Oakland, Calif., and William R. Hill Jr., Boston.

THURSDAY, JULY 4—MORNING

The following officers were elected: chairman, Nelson Paul Anderson, Los Angeles; vice chairman, George C. Andrews, New York; secretary, Clinton W. Lane, St. Louis; representative to Scientific Exhibit, Francis W. Lynch, St. Paul; American Board members, Hiram E. Miller, San Francisco; George Lewis, New York; delegate, C. F. Lehmann, San Antonio, Texas; alternate, Everett Fox, Dallas, Texas.

Dr. B. S. Kline, Cleveland, read a paper entitled "Recent Development Toward a Single Standard Blood Test for Syphilis: Cardiolipin Lecithin Antigen." Discussed by Drs. A. S. Giordano, South Bend, Ind.; M. H. Merrill, Berkeley, Calif.; R. C. Arnold, Staten Island, N. Y.; George W. Binkley, Cleveland; Charles R. Rein, New York, and Capt. John F. Kent, Washington, D. C.

Lieut. Col. Thomas H. Sternberg, M. C., A. U. S., and Dr. William Leifer, New York, presented a paper entitled "The Treatment of Early Syphilis with Penicillin." Discussed by Drs. Grant Morrow, San Francisco, and Charles R. Rein, New York.

Major Monroe J. Romansky, Washington, D. C., presented a paper on "The Treatment of 75 Cases of Early Syphilis with a Single Daily Intramuscular Injection of Calcium Penicillin in Beeswax and Peanut Oil." Discussed by Drs. D. R. Nichols, Rochester, Minn.; George V. Kulchar, San Francisco; Lieut. Col. Thomas H. Sternberg, M. C., A. U. S.; Marion B. Sulzberger, New York; Alfred Cohn, New York; G. W. Binkley, Cleveland; Samuel Ayres Jr., Los Angeles, and Major Monroe J. Romansky, M. C., A. U. S.

Drs. Augustus S. Rose and Harry C. Solomon, Boston, presented a paper entitled "Penicillin in the Treatment of Neurosyphilis: A Study of 100 Cases Followed Twelve Months or More." Discussed by Drs. Paul A. O'Leary, Rochester, Minn.; Norman N. Epstein, San Francisco; Louis A. Brunsting, Rochester, Minn., and Augustus S. Rose, Boston.

Dr. R. V. Platou, New Orleans, read a paper on "Infantile Congenital Syphilis: Two Hundred and Fifty-Two Cases Treated with Penicillin." Discussed by Drs. Arild E. Hansen, Galveston, Texas, and R. V. Platou, New Orleans.

Capt. William J. Morginson, Salt Lake City, read a paper on "Toxic Reactions Accompanying Penicillin Therapy." Discussed by Drs. Harold M. Johnson, Honolulu, Hawaii; Ben A. Newman, Los Angeles, and Comdr. E. E. Barksdale (MC), U.S.N.

Drs. Marion B. Sulzberger and Rudolf L. Baer, New York, presented a paper entitled "The Development and Use of BAL: A Review, with Particular Reference to Arsenical Dermatitis." Discussed by Drs. Julius R. Scholtz, Los Angeles; Herman Allington, Oakland, Calif.; John G. Downing, Boston; Stephen Rothman, Chicago, and Marion B. Sulzberger, New York.

FRIDAY, JULY 5—MORNING

Dr. Thomas W. Nisbet, Pasadena, Calif., read a paper on "Atabrine Dermatitis." Discussed by Drs. James R. Drake, San Francisco; Frederick G. Novy Jr., Oakland, Calif.; Comdr. E. E. Barksdale (MC), U.S.N.; Marvin Knoll, Los Angeles, and Alfred Hollander, Springfield, Mass.

Dr. Osgoode S. Philpott, Denver, read a paper on "Sulfonamide Psoriasiforme Dermatitis." Discussed by Drs. J. Bedford Shelmire, Dallas, Texas; Stuart C. Way, San Francisco, and Alfred Hollander, Springfield, Mass.

Drs. Arthur C. Curtis, Ann Arbor, Mich., and John N. Grekin, U. S. P. H. S., read a paper on "Histoplasmosis: A Review of the Cutaneous and Adjacent Mucous Membrane Manifestations, with a Report of Three Cases." Discussed by Drs. Carl W. Laymon, Minneapolis; John F. Kessel, Los Angeles; Frances Keddie, San Francisco; Fred D. Weidman, Philadelphia; Harry L. Arnold, Honolulu, Hawaii; Louis A. Brunsting, Rochester, Minn., and Arthur C. Curtis, Ann Arbor, Mich.

The chairman introduced Dr. Joseph Grindon Sr. of San Francisco, a retired dermatologist.

On motion regularly made, seconded and carried by a rising vote, it was voted to send greetings to Dr. William Thomas Corlett of Cleveland, the oldest living dermatologist.

Drs. John Godwin Downing and Millard C. Hanson, Boston, presented a paper entitled "The Use of 5-Nitro-2-Furaldehyde Semicarbazone in Dermatology." Discussed by Drs. J. Gardner Hopkins, New York; Francis W. Lynch, St. Paul, and John G. Downing, Boston.

Drs. Joseph V. Klauder and Fred A. Brill Jr., Philadelphia, presented a paper on "Correlation of the Boiling Ranges of Some Petroleum Solvents with Their Irritant Action on the Skin." Discussed by Drs. Louis Schwartz, Bethesda, Md.; Harry J. Templeton, Oakland, Calif., and Joseph V. Klauder, Philadelphia.

Drs. W. R. Hubler, Youngstown, Ohio, and E. W. Netherton, Cleveland, presented a paper on "Cutaneous Manifestations of Monocytic Leukemia." Discussed by Drs. Harry L. Arnold, Honolulu, Hawaii; Louie H. Winer, Beverly Hills, Calif.; Francis P. McCarthy, Boston, and W. R. Hubler, Youngstown, Ohio.

A rising vote of thanks was given to the San Francisco hosts of the section.

After installation of section officers, the meeting was adjourned.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

Wednesday, July 3—Afternoon

The meeting was called to order at 2:30 by the vice chairman, Dr. Clarence O. Sappington, Chicago.

In the unavoidable absence of Dr. W. A. Sawyer, Rochester, N. Y., secretary of the section, the vice chairman appointed Dr. P. A. Davis, Akron, Ohio, secretary pro tem.

Dr. Stanley H. Osborn, Hartford, Conn., delegate of the section to the House of Delegates, read the report of the Reference Committee on Industrial Health.

Drs. Herman E. Hilleboe and Norvin C. Kiefer, Washington, D. C., presented a paper on "Rehabilitation of the Tuberculous in Industry."

Dr. R. H. Riley, Baltimore, read a paper on "Medical Care in Maryland." Discussed by Dr. J. C. Geiger, San Francisco.

Drs. Charles E. Smith and Rodney R. Beard, San Francisco; Major H. G. Rosenberger, M. C., A. U. S., and Major E. G. Whiting, M. C., A. U. S., presented a paper on "Effect of Season and Dust Control on Coccidioidomycosis." Discussed by Dr. Russell V. Lee, San Francisco.

Olive Whitlock Klump, R.N., Los Angeles, read a paper on "The Doctor's Responsibility for Industrial Nursing." Discussed by Dr. R. T. Johnstone, Los Angeles.

Dr. J. R. Heller Jr., U. S. P. H. S., read a paper on "Results of Rapid Treatment of Early Syphilis." Discussed by Dr. Bruce Webster, New York.

Dr. Robert Collier Page, New York, read a paper on "Constructive Medicine and Industry."

Thursday, July 4—Afternoon

The following officers were elected: chairman, Clarence O. Sappington, Chicago; vice chairman, R. H. Riley, Baltimore; secretary, Rutherford T. Johnstone, Los Angeles; executive committee: Joseph W. Mountin, U. S. P. H. S.; E. L. Stebbins, New York; Clarence O. Sappington, Chicago; delegate, Stanley H. Osborn, Hartford, Conn.; alternate, Leverett D. Bristol, Augusta, Maine; representative to Scientific Exhibit, Paul A. Davis, Akron, Ohio.

Dr. William P. Shepard, San Francisco, spoke on the necessity for the establishment of a specialty board in public health and moved that the chairman be authorized to appoint a committee to study the desirability of establishing a specialty board, such committee to work jointly with such other committees of organized public health groups as may likewise be interested. The motion was regularly seconded, was put to a vote and was carried. The vice chairman appointed the following committee to study certification of public health workers and to work with other similar committees: E. L. Stebbins, New York, chairman; R. T. Johnstone, Los Angeles, and C. O. Sappington, Chicago, ex officio.

Dr. Robert L. Bennett, Warm Springs, Ga., read a paper on "Responsibility of the Public Health Physician in the Treatment of Poliomyelitis."

Dr. Edward A. Piszczek, Chicago, read a paper on "A Three Year Experience with Epidemic Poliomyelitis." Discussed by Dr. W. McD. Hammon, Berkeley, Calif.

Mr. Howard J. Shaughnessy and Dr. Sidney O. Levinson, Chicago, presented a paper on "Polyvalent Dysentery Vaccine in the Prevention of Experimental Human Bacillary Dysentery."

Dr. F. E. Poole, Los Angeles, read a paper on "Industrial Physical Examinations: Objectives and Methods." Discussed by Dr. R. R. Beard, San Francisco.

Dr. Julius Levy, Trenton, N. J., read a paper on "Promotion of Mental Health by a Health Department Through Improved Parent-Child Relations." Discussed by Dr. Oscar Reiss, Los Angeles.

Dr. Morris F. Collen, Oakland, Calif., read a paper on "A Study of Pneumonia in Shipyard Workers, with Special Reference to Welders."

SECTION ON UROLOGY

Wednesday, July 3—Afternoon

The meeting was called to order by the chairman, Dr. Arbor D. Munger, Lincoln, Neb., at 2 o'clock.

Drs. Austin I. Dodson and John R. Clark, Richmond, Va., presented a paper on the "Incidence of Urinary Calculi in the American Negro." Discussed by Drs. Wirt B. Dakin, Los Angeles; Monroe Wolf, New Orleans; Victor D. Lespinasse, Chicago, and Austin I. Dodson, Richmond, Va.

Dr. Milo Ellik, Long Beach, Calif., read a paper on "The Management of Ureteral Calculi." Discussed by Drs. Thomas E. Gibson, San Francisco; James C. Sargent, Milwaukee; Frederic E. B. Foley, St. Paul; Victor D. Lespinasse, Chicago; Henry Sangree, Philadelphia, and Milo Ellik, Long Beach, Calif.

Drs. Roger W. Barnes and Malcolm R. Hill, Los Angeles, presented a paper on "Intestinovesical Fistula." Discussed by Drs. John H. Morrissey, New York; Robert A. Scarborough, San Francisco; Grayson L. Carroll, St. Louis, and Roger W. Barnes, Los Angeles.

The following papers were read as a symposium on "Urinary Vesical Tumors":

Dr. Hugh J. Jewett, Baltimore: "Infiltrating Carcinoma of the Bladder: Application of Pathology to Clinical Diagnosis and Prognosis."

Dr. Harold P. McDonald: "Endoscopic Treatment of Bladder Tumors."

Dr. Victor F. Marshall, New York: "Comparison of Irradiated Bladder Cancer Cases with Recent Surgically Treated Cases."

Dr. James T. Priestley, Rochester, Minn.: "The Surgical Treatment of Carcinoma of the Bladder."

These four papers were discussed by Drs. Frank Hinman, San Francisco; Oswald S. Lowsley, New York; Lloyd G. Lewis, Washington, D. C.; Roger W. Barnes, Los Angeles; Gilbert J. Thomas, Beverley Hills, Calif.; Hugh J. Jewett, Baltimore, and Harold P. McDonald, Atlanta, Ga.

THURSDAY, JULY 4—AFTERNOON

The following officers were elected: chairman, Grayson L. Carroll, St. Louis; vice chairman, Clark M. Johnson, San Francisco; secretary, Edward N. Cook, Rochester, Minn.; delegate, Roy Henline, New York; alternate, William Herbst, Washington, D. C. Nominees to the Board of Urology: Grayson L. Carroll, St. Louis; A. I. Dodson, Richmond, Va., and Hermon C. Bumpus, Los Angeles.

Dr. Alfred I. Folsom, Dallas, Texas, read the report of the American Board of Urology, and made some remarks. It was moved by Dr. Victor D. Lespinasse, Chicago, seconded by Dr. Miley Wesson, San Francisco, and carried, that the report be accepted.

Lieut. Comdr. H. Carey Bumpus Jr., Lieut. Comdr. Myron H. Nourse and Comdr. Gershom J. Thompson presented a paper on "Urologic Complications in Injury of the Spinal Cord." Discussed by Drs. Miley B. Wesson, San Francisco; Willet F. Whitmore, New York; Grayson L. Carroll, St. Louis, and Myron H. Nourse, U. S. Navy.

Drs. Reed M. Nesbit and Rigdon K. Ratliff, Ann Arbor, Mich., read a paper on "The Influence of Nephrectomy on Hypertension in 49 Patients with Demonstrable Unilateral Renal Disease." Discussed by Drs. Alfred I. Folsom, Dallas, Texas; William J. McMartin, Omaha, and Rigdon K. Ratliff, Ann Arbor, Mich.

Dr. Arbor D. Munger, Lincoln, Neb., read the chairman's address, entitled "A Plea for a More Conservative Attitude in Kidney Surgery."

The following papers were read as a symposium on "The Use of Antibiotics in Urinary Infections":

Dr. Francis H. Redewill, San Francisco: "Streptomycin in the Successful Treatment of Tuberculosis of the Urinary Bladder: Report of Two Cases."

Drs. Edward N. Cook and Thomas L. Pool, Rochester, Minn.: "The Present Concepts of Treatment of Infections of the Urinary Tract."

Dr. John D. Adcock, Ann Arbor, Mich.: "Streptomycin for Urinary Tract Infections."

These three papers were discussed by Drs. Gilbert J. Thomas, Beverley Hills, Calif.; James E. Potter, Palm Springs, Calif.; John W. Hirshfeld, Ithaca, N. Y.; W. Ray Jones, Seattle; Victor D. Lespinasse, Chicago, and F. H. Redewill, San Francisco, Calif.

FRIDAY, JULY 5—AFTERNOON

Dr. Frederic E. B. Foley, St. Paul, read a paper entitled "An Artificial Sphincter: A New Operation and Device for Control of Urinary Incontinence." Discussed by Drs. Grayson L. Carroll, St. Louis; John K. Ormond, Detroit, and Frederic E. B. Foley, St. Paul.

Dr. John K. Ormond, Detroit, read a paper on "Radical Perineal Prostatectomy for Carcinoma." Discussed by Drs. Harry C. Rolnick, Chicago; Roy Henline, New York; Grayson L. Carroll, St. Louis; William F. Braasch, Rochester, Minn., and John K. Ormond, Detroit.

Drs. Lewis Michelson and Robin P. Michelson, San Francisco, presented a paper on "Fertility Studies of the Male in Barren Marriages." Discussed by Drs. Henry Sangree, Philadelphia; Victor D. Lespinasse, Chicago; Edward T. Tyler, Los Angeles, and Lewis Michelson, San Francisco.

Dr. G. Franklin Farman, Los Angeles, read a paper on "Androgen Therapy in Prostatic Disease." Discussed by Drs. Willard Thompson, Chicago; Roy Henline, New York, and Monroe Wolf, New Orleans.

Dr. Samuel A. Vest, Charlottesville, Va., read a paper on "Renal Crush Syndrome." Discussed by Drs. Carl E. Burkland, Sacramento, Calif.; Victor D. Lespinasse, Chicago, and Arthur C. Corcoran, Cleveland.

SECTION ON ORTHOPEDIC SURGERY

WEDNESDAY, JULY 3—MORNING

The meeting was called to order at 9:20 by the chairman, Dr. Theodore A. Willis, Cleveland.

Drs. Edward L. Compere and William J. Schnute, Chicago, presented a paper on "Ambulatory Treatment of Hallux Valgus." Discussed by Drs. Sylvan L. Haas, San Francisco, and William J. Schnute, Chicago.

Dr. Nicholas S. Ransohoff, New York, read a paper on "Use of Curare (Intocostrin) in the Treatment of Acute Anterior Poliomyelitis." Discussed by Drs. M. S. Henderson, Rochester, Minn.; Robert Bingham, Riverside, Calif.; Philip Lewin, Chicago; J. Warren White, Greenville, S. C.; H. Relton McCarroll, St. Louis, and Nicholas S. Ransohoff, New York.

Dr. Frederic C. Bost, San Francisco, read a paper entitled "An Ambulatory Splint for the Treatment of Cervical Spine Injuries." Discussed by Drs. Rudolph L. Dresel, San Francisco, and Frederic C. Bost, San Francisco.

Dr. C. E. Irwin, Warm Springs, Ga., read a paper on "Trochanteric Osteotomies in Poliomyelitis." Discussed by Drs. Charles L. Lowman, Los Angeles; J. Warren White, Greenville, S. C., and C. E. Irwin, Warm Springs, Ga.

The chairman appointed as a nominating committee M. S. Henderson, Rochester, Minn., chairman, C. E. Irwin and Frederic C. Bost.

Dr. Eugene M. Regen, Nashville, Tenn., read a paper on "Conservative Treatment of Low Back Pain, Including Suspected Disk Lesions." Discussed by Drs. George J. Garceau, Indianapolis, and Eugene M. Regen, Nashville.

THURSDAY, JULY 4—MORNING

The following officers were elected: chairman, Dr. Francis M. McKeever, Los Angeles; vice chairman, Dr. J. Warren White, Greenville, S. C.; secretary, Dr. Joseph Barr, Boston; delegate, Dr. Archer O'Reilly, St. Louis; alternate, Dr. Edward L. Compere, Chicago; nominees for American Board of Orthopedic Surgery, Dr. J. S. Speed, Memphis, Tenn., and Dr. J. Campbell Thompson, Lexington, Ky.

Drs. Ralph K. Ghormley and H. H. Young, Rochester, Minn., presented a paper on "Farm Injuries." Discussed by Drs. Hugh T. Jones, Los Angeles; Douglas D. Dickson, Oakland, Calif., and H. H. Young, Rochester, Minn.

Dr. Theodore A. Willis, Cleveland, read the chairman's address, entitled "Orthopaedia MCMXLVI."

Dr. H. Relton McCarroll, St. Louis, read a paper on "The Use of Small Threaded Wires in the Treatment of Fractures." Discussed by Drs. Donald E. King, San Francisco; Francis M. McKeever, Los Angeles; William J. Schnute, Chicago; H. H. Stryker, Kalamazoo, Mich., and H. Relton McCarroll, St. Louis.

Dr. Joseph S. Barr, Boston, read a paper on "Solid Blast Injuries." Discussed by Drs. William F. Holcomb, Oakland, Calif., and Joseph S. Barr, Boston.

FRIDAY, JULY 5—MORNING

A joint meeting was held with the Section on Anesthesiology.

Dr. B. B. Sankey, East Cleveland, Ohio, read a paper on "Various Anesthetics in Orthopedic Surgery." Discussed by Drs. Francis M. McKeever, Los Angeles; Steele F. Stewart, Honolulu, Hawaii, and B. B. Sankey, East Cleveland, Ohio.

Dr. Archer O'Reilly, St. Louis, presented his report as delegate, stating that Dr. Olin West had been chosen President-Elect unanimously. He reported that there had been considerable discussion on compulsory state medicine and voluntary health insurance as well as bills now before Congress for consideration, though no definite action had been taken.

Dr. O'Reilly reported that the matter of public relations had been thoroughly discussed, and it was his opinion that the new program would prove of great value both to the Association and to the medical profession. He stated that the 1947 meeting would be held at Atlantic City, N. J., and that an excellent program was being formulated.

Capt. John Dillon, M. C., A. U. S., read a paper on "Choice of Anesthesia in Orthopedic Surgery." Discussed by Drs. C. J. Betlach, Santa Barbara, Calif.; Dorothy A. Wood, San Mateo, Calif.; F. E. Clough, San Bernardino, Calif.; W. Allen Conroy, Chicago, and John Dillon, M. C., A. U. S.

Dr. Theodore A. Willis, chairman, expressed for the section great appreciation for the valuable assistance given orthopedic surgeons by anesthetists and the hope that the system would be rapidly extended in the future.

Dr. Henry S. Ruth, Philadelphia, presented his report as delegate. He stated in reference to the two resolutions presented by the section that both had been tabled and no action taken.

Drs. M. J. Nicholson and Urban H. Eversole, Boston, presented a paper on "Neurologic Complications of Spinal Anesthesia." Discussed by Drs. Archer O'Reilly, St. Louis; A. M. Caine, New Orleans; Capt. John Dillon, M. C., A. U. S., and Urban H. Eversole, Boston.

Drs. Lyman Weeks Crossman and Frederick M. Allen, New York, presented a paper on "Refrigeration Anesthesia." Discussed by Drs. Bruce M. Anderson, Oakland, Calif., Professor John Field, Stanford University; H. H. Stryker, Kalamazoo, and Lyman Weeks Crossman, New York.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

Wednesday, July 3—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. J. A. Bargen, Rochester, Minn.

Dr. Benjamin M. Bernstein, Brooklyn, read a paper on "Histamine in the Therapy of 'Peptic Ulcer'." Discussed by Drs. A. C. Ivy, Chicago; B. C. Lockwood, Detroit; Harry Shay, Philadelphia; M. W. Freeman, Detroit, and B. M. Bernstein, Brooklyn.

Drs. Everett D. Kiefer and David McC. McKell Jr., Boston, presented a paper on "Peptic Ulcer in the Aged." Discussed by Drs. William C. Boeck, Los Angeles; Zachary Sagal, New York; Russell S. Boles, Philadelphia; Hyman I. Goldstein, Camden, N. J., and Everett D. Kiefer, Boston.

Drs. Harry Shay and S. A. Komarov, Philadelphia, presented a paper on "Relative Importance of Acid and Pepsin in Production of Experimental Gastric Ulcers in the Rat, with an Evaluation of Some Antacid and Antipeptic Agents." Discussed by Drs. John H. Fitzgibbon, Portland, Ore.; Hyman I. Goldstein, Camden, N. J., and Harry Shay, Philadelphia.

Drs. Robert M. Zollinger, Columbus, Ohio, and Stanley O. Hoerr, Boston, presented a paper on "Troublesome Symptoms Following Gastric Operations, with Special Reference to Carbohydrate Ingestion." Discussed by Drs. H. Glenn Bell, San Francisco; Sidney A. Portis, Chicago, and Asher Winkelstein, New York.

Dr. Richard Lewisohn, New York, read a paper on "Partial Gastrectomy versus Palliative Resection in the Treatment of Duodenal Ulcers." Discussed by Dr. Frank H. Lahey, Boston.

Dr. Harry L. Segal and Henry A. Blair, Ph.D., Rochester, N. Y., presented a paper on "Cerebral Dysrhythmias Associated with Gastrointestinal Syndromes." Discussed by Dr. Matthew T. Moore, Philadelphia.

Drs. David Adlersberg and Joseph T. Schein, New York, presented a paper on "Clinical and Pathologic Studies in Sprue." Discussed by Drs. George Baehr, New York; Daniel N. Silverman, New Orleans; J. E. Gossard, Sierre Madre, Calif., and David Adlersberg, New York.

Dr. Hyman I. Goldstein, Camden, N. J., read a paper on "Unusual (Benign) Hematemesis: Gastric Telangiectatic Dysplasia; Rendu-Osler-Weber's Disease (Goldstein's Hematemesis.)" Discussed by Drs. Felix Cunha, San Francisco, and Hyman I. Goldstein, Camden, N. J.

Thursday, July 4—Morning

The following officers were elected: chairman, Martin S. Kleckner, Allentown, Pa.; vice chairman, Sara M. Jordan, Boston; secretary, Grant Laing, Chicago; executive committee: Emmett H. Terrell, Richmond, Va.; J. Arnold Bargen, Rochester, Minn., and Martin S. Kleckner, Allentown, Pa.; delegate, Louis A. Buie, Rochester, Minn.; alternate, Walter A. Fansler, Minneapolis; representative to American Board of Proctology, Central Certifying Committee on Proctology, Walter A. Fansler, Minneapolis; representative on American Board of Gastroenterology, Walter L. Palmer, Chicago.

Dr. A. F. R. Andresen, Brooklyn, made a report on the work of the American Board of Gastroenterology.

Dr. Louis A. Buie, Rochester, Minn., delegate of the section to the House of Delegates, reported on tentative plans for the centennial.

Dr. J. A. Bargen, Rochester, Minn., read the chairman's address, entitled "Modern Concepts of Intestinal Function."

Dr. Henry M. Weber, Rochester, Minn., read a paper on "The Roentgenologic Contribution to the Diagnosis of Functional Intestinal Disorders."

Drs. Donovan C. Browne, Gordon McHardy and George Welch, New Orleans, presented a paper on "Treatment of Intestinal Conditions as Based on Disordered Function."

These two papers were discussed by Drs. Sara M. Jordan, Boston; Zachary Sagal, New York; A. F. R. Andresen, Brooklyn; Harry M. Weber, Rochester, Minn., and Donovan C. Browne, New Orleans.

Drs. Curtice Rosser and Jack G. Kerr, Dallas, Texas, presented a paper on "Pilonidal Disease—Present Status of Management." Discussed by Dr. Walter A. Fansler, Minneapolis.

Dr. Carl Bearse, Boston, read a paper on "Diverticulosis and Diverticulitis of the Colon in Young People." Discussed by Drs. Reginald Fitz, Boston, and Carl Bearse, Boston.

Drs. Daniel N. Silverman and Alan N. Leslie, New Orleans, presented a paper on "Intestinal Tumors of Dysentery Origin." Discussed by Drs. Russell S. Boles, Philadelphia, and Daniel N. Silverman, New Orleans.

Dr. Martin S. Kleckner, Allentown, Pa., read a paper on "Proctologic Interpretation and Treatment of Chronic Ulcerative Colitis." Discussed by Dr. A. W. Martin Marino, Brooklyn.

Drs. Burrill B. Crohn, John H. Garlock and Harry Yarnis, New York, presented a paper on "Right-Sided Regional Colitis."

Dr. Michael H. Streicher, Chicago, read a paper on "Clinical, Chemical and Bacteriologic Evaluation of Oral Penicillin in Chronic Ulcerative Colitis."

Drs. H. Marvin Pollard, Malcolm Block and William H. Bachrach, Ann Arbor, Mich., presented a paper on "The Causes and Management of Anemia Associated with Chronic Ulcerative Colitis."

These three papers were discussed by Drs. J. A. Bargen, Rochester, Minn.; Theodore L. Althausen, San Francisco; Everett D. Kiefer, Boston; Albert H. Rowe, Oakland, Calif.; Martin S. Kleckner, Allentown, Pa.; Burrill B. Crohn, New York; Michael H. Streicher, Chicago, and H. Marvin Pollard, Ann Arbor, Mich.

Friday, July 5—Morning

A joint meeting was held with the Section on Pathology and Physiology.

The following papers were presented as a Symposium on "Diseases of the Liver":

Dr. James F. Weir, Rochester, Minn.: "Physiology of Liver Disease: Application of Modern Physiologic Concepts to Treatment of Disease of the Liver."

Dr. Edwin E. Osgood, Portland, Ore.: "Interpretation of Liver Function Tests."

Drs. Theodore L. Althausen and Joseph E. Giansiracusa, San Francisco: "Diagnosis of and Therapeutic Agents Used in Liver Disease: Diagnostic Management of Patients with Jaundice."

Dr. Frederick W. Hoffbauer, Minneapolis: "Needle Biopsy of the Liver."

Dr. Dwight L. Wilbur, San Francisco: "Therapeutic Agents in Liver Disease: A Review of the Medical Agents."

Dr. W. Paul Havens Jr., New Haven, Conn.: "Epidemic Hepatitis: Infectious Hepatitis—Etiology."

Dr. Richard B. Capps, Chicago; Capt. Victor M. Sborov, M. C., A. U. S., and M. Herbert Barker, Chicago: "Clinical and Laboratory Diagnosis."

Dr. Tracy B. Mallory, Boston: "The Pathology of Epidemic Hepatitis."

Drs. Stockton Kimball, William A. C. Chapple and Samuel Sanes, Buffalo: "Cirrhosis of the Liver: Its Relation to Hepatitis."

Drs. Russell S. Boles, Robert S. Crew and William Dunbar, Philadelphia: "Alcoholic Cirrhosis."

Dr. Lester M. Morrison, Los Angeles: "New Methods of Therapy in Cirrhosis of the Liver."

These eleven papers were discussed by Drs. Cecil J. Watson, Minneapolis; S. J. Glass, Los Angeles; Leon Schiff, Cincinnati; T. L. Althausen, San Francisco; Harry Shay, Philadelphia; Hyman I. Goldstein, Camden, N. J.; Leo Lowbeer, Tulsa, Okla.; Virgil H. Moon, Philadelphia; Edwin E. Osgood, Portland, Ore.; Frederick W. Hoffbauer, Minneapolis; Victor M. Sborov, M. C., A. U. S., Chicago; Tracy B. Mallory, Boston; Stockton Kimball, Buffalo; Russell S. Boles, Philadelphia, and Lester M. Morrison, Los Angeles.

SECTION ON RADIOLOGY

WEDNESDAY, JULY 3—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Edwin C. Ernst, St. Louis.

In the absence of Drs. Ralph S. Bromer, Bryn Mawr, Pa., and Robert A. Arens, Chicago, members of the executive committee, the chairman appointed Drs. H. Dabney Kerr, Iowa City, and Charles M. Richards, San Jose, Calif., to act in their stead. Drs. Kerr and Richards also were appointed to serve as the nominating committee.

Drs. W. Edward Chamberlain, Philadelphia; Carl C. Birkelo, Detroit; Paul S. Phelps, Hartford; Percy E. Schools, Richmond; J. Yerushalmy, Washington, D. C., and David Zacks, Boston, presented a paper on "A Comparison of the Effectiveness for Tuberculosis Case Finding of Various Roentgenographic and Photofluorographic Methods." Discussed by Drs. L. Henry Garland, San Francisco; Herman E. Hilleboe, Washington, D. C.; E. R. Long, Philadelphia; James M. Flynn, Rochester, N. Y., and W. Edward Chamberlain, Philadelphia.

Drs. Henry B. Zwerling and Carroll E. Palmer, United States Public Health Service, presented a paper on "Nontuberculous Pulmonary Calcification and Histoplasmin Sensitivity." Discussed by Drs. Charles E. Smith, San Francisco; Ray O. Carter, Los Angeles; W. Edward Chamberlain, Philadelphia, and Henry B. Zwerling, U. S. Public Health Service.

Drs. B. R. Kirklin and Eva L. Gilbertson, Rochester, Minn., presented a paper on "The Diagnosis of Carcinoma of the Stomach by Chest Roentgenography." Discussed by Dr. Wilbur Bailey, Los Angeles.

Drs. Fred J. Hodges and John F. Holt, Ann Arbor, Mich., presented a paper on "Epicardial Fat Shadows in Differential Diagnosis." Discussed by Drs. W. Walter Wasson, Denver; H. Dabney Kerr, Iowa City, and John F. Holt, Ann Arbor, Mich.

THURSDAY, JULY 4—MORNING

The following officers were elected: chairman, Dr. Bernard P. Widmann, Philadelphia; vice chairman, Dr. W. Walter Wasson, Denver; delegate, Dr. B. R. Kirklin, Rochester, Minn.; alternate, Dr. E. P. Pendergrass, Philadelphia; representative to the American Board of Radiology, Dr. Leo G. Rigler, Minneapolis; nominee for the honored radiologist to present the historical review at the 1947 annual session, Dr. George W. Holmes, Boston.

Dr. Edwin C. Ernst, St. Louis, read the chairman's address, entitled "Mandibular Joint Syndrome."

Drs. Arthur C. Christie and George M. Wyatt, Washington, D. C., presented a paper on "Changes in Roentgenologic Diagnostic Criteria Resulting from Chemotherapy." Discussed by Drs. L. Henry Garland, San Francisco; Lowell S. Goin, Los Angeles, and George M. Wyatt, Washington, D. C.

Dr. Lowell S. Goin, Los Angeles, spoke on compulsory health insurance.

Drs. Charles L. Martin and Carleton C. Wright, Dallas, Texas, presented a paper on "Irradiation Therapy for Cancer of the Face, Mouth and Metastatic Cervical Lymph Nodes." Discussed by Drs. Henry J. Ullmann, Santa Barbara; Lyell C. Kinney, San Diego; Tibor de Cholnoky, New York; Dr. L. H. Garland, San Francisco, and Charles L. Martin, Dallas.

Drs. Paul C. Hodges and Russell H. Morgan, Chicago, presented a paper on "The Cancer Problem and Nuclear Physics." Discussed by Drs. Robert S. Stone, San Francisco; Manuel Riebeling, Guadalajara, Mexico; Edward H. Reinhard, St. Louis, and Russell H. Morgan, Chicago.

FRIDAY, JULY 5—MORNING

A joint meeting was held with the Section on Laryngology, Otology and Rhinology.

Drs. Samuel J. Crowe and Edward M. Walzl, Baltimore, presented a paper on "The Irradiation Treatment of Hyperplastic Lymphoid Tissue in the Nasopharynx." Discussed by Drs. H. A. Fletcher, San Francisco; J. S. Mikell, Tucson, Ariz.; Henry J. Ullmann, Santa Barbara, Calif.; Herman Semenov, Berkeley Hills, Calif.; and Edward M. Walzl, Baltimore.

Drs. Franz J. Buschke and Simeon T. Cantril, Seattle, presented a paper on "Supervoltage Roentgen Therapy for Carcinoma of the Esophagus." Discussed by Drs. Robert S. Stone, San Francisco; Maurice Lenz, New York; Paul Holinger, Chicago; Louis Daily, Houston, Texas, and Franz J. Buschke, Seattle.

Dr. Maurice Lenz, New York, read a paper on "Roentgen Therapy for Carcinoma of the Larynx."

Dr. Simon Jesberg, Los Angeles, read a paper on "Surgical Management of Carcinoma of the Larynx."

These two papers were discussed by Drs. Orville N. Meland, Los Angeles; Julius A. Weber, Seattle; T. E. Carmody, Denver; Irving Voorhees, New York; L. H. Clerf, Philadelphia; Paul Holinger, Chicago; Maurice Lenz, New York, and Simon Jesberg, Los Angeles.

Dr. John C. Jones, Los Angeles, read a paper on "Surgical Aspects of Bronchogenic Carcinoma." Discussed by Drs. B. V. A. Low-Beer, Pasadena, Calif.; Paul C. Samson, Oakland, Calif.; Leo G. Rigler, Minneapolis; Maurice Lenz, New York, and John C. Jones, Los Angeles.

SECTION ON ANESTHESIOLOGY

WEDNESDAY, JULY 3—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Ansel M. Caine, New Orleans.

The following papers were read as a symposium on "Military Anesthesia in World War II":

Vice Admiral Ross T. McIntire (MC), United States Navy: "Program of the United States Navy."

Captain Donald E. Hale (MC), United States Naval Reserve: "Wartime Anesthesia in United States Navy." Discussed by Lieut. Comdr. Joseph T. Trotter Jr. (MC), U.S.N.R.

Dr. Roger I. Lee, Boston: Remarks.

Major Gen. Norman T. Kirk, M. C., U. S. Army: "Program of the United States Army in Military Anesthesiology."

Col. Ralph M. Tovell, M. C., A. U. S.: "Problems in Training in and Practice of Anesthesiology in the European Theater of Operations." Discussed by Lieut. Col. F. E. Davis, M. C., A. U. S.

Lieut. Col. C. F. McCuskey: "Problems of Anesthesiology Consultant for the Pacific Ocean Areas." Discussed by Major Forrest E. Leffingwell, M. C., A. U. S., and Dr. Paul M. Wood, New York.

Lieut. Col. Henry K. Beecher, M. C., A. U. S.: "Lessons Learned from Resuscitation of Wounded Soldiers That Are Applicable to Civilian Practice." Discussed by Major Malcolm H. Hawk, M. C., A. U. S., and John H. Hutton, Portland, Ore.

Lieut. Col. Lloyd H. Mousel, M. C., A. U. S.: "Anesthesia for Thoracic Surgery in the Zone of the Interior." Discussed by Major Ernest W. Warnock, M. C., A. U. S.; Major Gordon C. Langsdorf, M. C., A. U. S.; Dr. W. Allen Conroy, Chicago; Dr. Celia McNeely, Salem, Ore., and Lieut. Col. Lloyd H. Mousel, M. C., A. U. S.

THURSDAY, JULY 4—AFTERNOON

The following officers were elected: chairman, Dr. Charles F. McCuskey, Los Angeles; vice chairman, Dr. Harry Boyd Stewart, Tulsa, Okla.; secretary, Dr. John S. Lundy, Rochester, Minn.; executive committee, Dr. Charles F. McCuskey, Los Angeles; Dr. Paul M. Wood, New York; Dr. Ansel M. Caine, New Orleans; delegate, Dr. Henry S. Ruth, Philadelphia; alternate, Dr. Frederick Haugen, Philadelphia.

Dr. Ansel M. Caine, New Orleans, read the chairman's address, entitled "Group Practice of Anesthesiology."

The following papers were read as a symposium on "Curare":

Drs. Robert M. Featherstone and E. G. Gross, Iowa City: "Effects of Curare on Tissue Respiration."

Dr. Scott M. Smith, Salt Lake City: "The Use of Curare in Infants and Children."

Dr. Phyllis Harroun, San Francisco: "The Physiologic Effects of Curare and Its Use as an Adjunct to Anesthesia."

These three papers were discussed by Drs. Stuart C. Cullen, Iowa City; William B. Neff, San Francisco; Professor John Field, Stanford University, Calif.; Dr. Dell T. Lundquist, Palo Alto, Calif.; Dr. A. R. McIntyre, Omaha; Dr. Robert M. Featherstone, Iowa City; Dr. Scott M. Smith, Salt Lake City, and Dr. Frederick E. Beckert, San Francisco.

Drs. R. J. Whitacre and J. K. Potter, East Cleveland, Ohio, presented a paper entitled "The Subarachnoid Use of Vasoconstrictors in Spinal Anesthesia." Discussed by Drs. Curtiss B. Hickox, Philadelphia; John Adriani, New Orleans, and R. J. Whitacre, East Cleveland, Ohio.

Dr. Perry P. Volpitto, Augusta, Ga., read a paper on "Intravenous Sodium Pentobarbital and Scopolamine Amnesia in Parturition." Discussed by Drs. John A. Moffitt, Los Angeles, Walter Lawrence, San Francisco, and Perry P. Volpitto, Augusta, Ga.

FRIDAY, JUNE 5

A joint meeting was held with the Section on Orthopedic Surgery. The proceedings are reported in the minutes of that section.

SECTION ON GENERAL PRACTICE OF MEDICINE

WEDNESDAY, JULY 3—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Wingate M. Johnson, Winston-Salem, N. C.

Dr. Wingate M. Johnson, Winston-Salem, N. C., read the chairman's address, entitled "Will the Family Doctor Survive?" Discussed by Dr. E. A. Royston, Los Angeles.

Dr. Hilger Perry Jenkins, Chicago, read a paper on "The Present Status of Gelatin Sponge as a Hemostatic Agent." Discussed by Drs. Virginia Kneeland Frantz, New York, and Hilger Perry Jenkins, Chicago.

Dr. Donald H. Kaump, Detroit, read a paper on "Laboratory Tests in General Practice."

Dr. J. J. Callahan, Chicago, read a paper on "Dislocations." Discussed by Dr. George I. Wright, Klamath Falls, Ore.

Dr. David Cayer, Winston-Salem, N. C., read a paper on "The Diagnosis and Treatment of Early Deficiency Diseases." Discussed by Drs. Charles F. Nelson, Beverly Hills, Calif.; H. Vern Soper, Los Angeles; J. Craig Bowman, Upper Sandusky, Ohio, and David Cayer, Winston-Salem, N. C.

Drs. Edward T. Tyler and Sheldon A. Payne, Los Angeles, presented a paper on "The Physiology of Spermatogenesis and the Correlative Therapy of Infertility." Discussed by Drs. Walter W. Williams, Springfield, Mass.; Fred A. Simmons, Boston; L. C. Burwell, Los Angeles, and Edward T. Tyler, Los Angeles.

THURSDAY, JULY 4—MORNING

Executive Session

The following officers were elected: chairman, Dr. Paul A. Davis, Akron, Ohio; vice chairman, Dr. E. A. Royston, Los Angeles; secretary, Dr. W. B. Harm, Detroit; delegate, Dr. Howard E. Griffin, Graham, Texas; alternate, Dr. Tom Robinson, Salt Lake City. Dr. B. E. Pickett, Carrizo Springs, Texas, was appointed by the chairman to serve on the executive committee in place of Dr. Stark, who was absent.

The following resolution was presented by Dr. E. A. Royston, Los Angeles, and, after discussion by Drs. B. E. Pickett, Carrizo Springs, Texas, John Z. Brown, Salt Lake City, and Robert S. Drews, Detroit, it was unanimously adopted:

WHEREAS, The delegates of the American Medical Association have seen fit to establish an individual section on the General Practice of Medicine; and

WHEREAS, The general practitioner has been recognized as a separate branch in the medical profession; and

WHEREAS, It is essential to the best interests and progress of the Section on General Practice of Medicine that the organization setup of the parent group, the American Medical Association, be carried through to the component parts of that Association; therefore be it

Resolved, That the delegates of the American Medical Association here assembled in convention voice their approval of the establishment of sections in the general practice of medicine in the various state and county organizations that are a part of the Association and in the hospitals that are approved by the Council on Medical Education and Hospitals.

On motion by Dr. H. T. Jackson, Fort Worth, Texas, duly seconded, it was voted to hold a business meeting immediately following the executive session to discuss problems of the general practitioner. (The meeting was informal in character, and no report of it was made.)

Scientific Session

Dr. August A. Werner, St. Louis, read a paper on "The Male Climacteric." Discussed by Drs. V. D. Lespinasse, Chicago; Wingate M. Johnson, Winston-Salem, N. C., and August A. Werner, St. Louis.

Dr. Thomas J. Dry, Rochester, Minn., read a paper entitled "How Long Does the Patient with Angina Pectoris Due to Coronary Sclerosis Live?" Discussed by Drs. John S. Z. Brown, Salt Lake City, and Thomas J. Dry, Rochester, Minn.

Dr. G. Lawrence Chaffin, Los Angeles, read a paper on "The 'Acute Abdomen' as It Applies to the General Practitioner." Discussed by Drs. Wingate M. Johnson, Winston-Salem, N. C., and G. Lawrence Chaffin, Los Angeles.

Dr. Raymond W. Waggoner, Ann Arbor, Mich., read a paper on "Psychoneurosis: Its Significance in General Practice." Discussed by Dr. Karl Bowman, San Francisco; Gen. Eugene G. Reinartz, U. S. Army, Randolph Field, Texas; Drs. John Z. Brown, Salt Lake City, and Raymond W. Waggoner, Ann Arbor, Mich.

Dr. E. J. Teeter, Indianapolis, read a paper on "Bile Physiology and Therapy."

FRIDAY, JULY 5—MORNING

A joint meeting was held with the Section on Obstetrics and Gynecology.

Drs. Robert D. Mussey and Robert B. Wilson, Rochester, Minn., presented a paper on "The Nervous Pathways Involved in Pelvic Pain: Some Anatomic and Physiologic Aspects." Discussed by Drs. Arthur H. Curtis, Chicago; Joe Vincent Meigs, Boston; B. B. Weinstein, New Orleans; John G. P. Cleland, Oregon City, Ore., and Robert D. Mussey, Rochester, Minn.

Dr. Wilbur R. Miller, Iowa City, read a paper on "Psychosomatic Aspects of Pelvic Pain." Discussed by Drs. William G. Barrett, San Francisco; Dorothy Morse, San Francisco, and Wilbur R. Miller, Iowa City.

Dr. R. Glenn Craig, San Francisco, read a paper on "Pelvic Pain: The Role of the Urinary Tract from the Point of View of the Gynecologist." Discussed by Drs. Harold O'Brien, Dallas, Texas; M. Y. Dabney, Birmingham, Ala.; A. D. Myers, Baldwin Park, Calif.; A. I. Folsom, Dallas, Texas; V. D. Lespinasse, Chicago, and R. Glenn Craig, San Francisco.

Dr. Horace C. Pitkin, San Francisco, read a paper on "Orthopedic Causes of Pelvic Pain." Discussed by Drs. C. Frederic Fluhmann, San Francisco; J. W. Davies, New York; Douglas Campbell, San Francisco, and Horace C. Pitkin, San Francisco.

Drs. Richard Torpin, R. A. Woodbury, G. F. Child, W. G. Watson and Louise Jarboe, Augusta, Ga., presented a paper on "Deviations of Myometrial Physiology as a Cause of Pelvic Pain in Women." Discussed by Drs. M. Pierce Rucker, Richmond, Va.; A. R. Abarbanel, Beverly Hills, Calif., and William A. Hunter, Los Angeles.

THE WAGNER-MURRAY-DINGELL BILL

Hearings on S. 1606—To Provide for a National Health Program

(NOTE.—*This is a condensation of the verbatim report of the hearings.*—ED.)

(Continued from page 1082)

United States Senate, Committee on Education and Labor.

MAY 29, 1946

HONORABLE JAMES E. MURRAY Presiding

PRESENT: Senators Murray, Hill and Donnell.

Statement of Dr. Edward H. Ochsner, Chicago Medical Society

DR. OCHSNER: My first direct personal contact with the problem of social insurance occurred in the fall of 1896 when I was an assistant in an ambulatory krankenkasse nose and throat clinic in Leipzig, Germany. The clinic was under the direct personal supervision of a privatdozent of the university, a man in the forties, of excellent training, high ideals and fine personality, and yet I can truthfully say that the services rendered to the patient were mediocre, about the type of services usually rendered in the city and college dispensaries of this country. The treatments were mostly simply palliative, rarely curative, and no time was spent on personal hygiene and preventive medicine for the simple reason that it was so taken up with trivialities that there was none left for the more important problems, such as careful personal histories and general examinations in order to get at the causes of the nose and throat ailments from which the individual patients were suffering. It was my privilege to become well acquainted with the head of the clinic, and one day about 2:30 p. m., after we had all worked without interruption since about 9 a. m., this head physician said to me "Now I am going home to my private office in order to supplement my meager income from the krankenkasse with a little private practice income so that I can support my wife and baby decently."

From Leipzig I went to Hamburg to serve as extern in the Neue allgemeine Krankenhaus located in the suburb of Eppendorf, a cottage hospital at that time of some 1,500 beds. It was here that I had my second direct contact with social insurance. I had been there only a few days when I made the rounds one morning with the head surgeon of the hospital, Professor Kuemmel. We went to one of the pavilions for the so-called third class male patients, where the professor spent considerable time examining several of them. As we stepped out of the pavilion he turned to me, the only American in the group, and with a good deal of emphasis and some heat said substantially "I have to waste one quarter of my time ferreting out malingerers." While there was probably some exaggeration in the statement, I soon found by further personal observation that there was much truth in what he said.

My third personal experience was in the winter of 1904 and 1905 in the ambulatory krankenkasse clinic of Professor Schleich in Berlin. At a quarter past 2 his second assistant breezed into the room and said in his peculiar Berlin vernacular "That tinlizzie of mine is some girl. I started out at 9 o'clock this morning to make health insurance calls. I had plenty of time for a good dinner and between 9 and 2 I made twenty-three calls." It was before the days of self starters. Let us figure out approximately how much time he had for each one of those calls. Take off half an hour for lunch. That leaves four and one-half hours for twenty-three calls, or a little less than twelve minutes per call. When we analyze just what each call involved we will get some idea as to just how much of those twelve minutes he was able to give to getting a history of the patient, examining him, prescribing and giving personal advice and general directions.

SENATOR DONNELL: Doctor, included in that period of time would be the trips from one place to the other, so he really could not give twelve minutes to each patient, could he? DR. OCHSNER: No. It was a cold, blustery day on the narrow streets of Berlin with a good deal of newly fallen snow on the ground. When the doctor got to the home of his patient he had to get out of his car, walk to the house, go up and down from one to four flights of stairs, knock and open the door, go into the room, take off his hat and overcoat—they always did that—question and examine the patient, prescribe for him, then put on his overcoat and hat, go back to the car, crank it, for he had no chauffeur, get into the car and drive on to the next patient. Further comment is quite unnecessary, when you think that was twelve minutes' service. These three personal experiences gave me an insight into the practical workings of compulsory health insurance as no purely theoretical knowledge could have given me. Will government controlled medicine insure more prompt services? The claim is made by the proponents of socialized medicine that such a system will insure prompter medical services because doctors will be called when the first sign of illness occurs instead of when the condition has become serious. Actual experience disproves this claim. Dr. Potts, who made a careful study of conditions in German hospitals, made the significant observation "I saw in the surgical department of the city hospital in Frankfort more drainage than clean cases of appendicitis." You know the difference between drainage and clean cases. Compare this with conditions in this country, where the number of drainage cases in appendicitis is considerably less than 20 per cent, and I saw in the hospitals of Frankfort more than 50 per cent.

SENATOR DONNELL: Doctor, I must confess my ignorance. What is the difference between a drainage case and a clean case? DR. OCHSNER: In a clean case you get the patient within twenty-four hours and you take out the appendix and sew up the abdomen. In the drainage case you get an abscess varying in size from a walnut to a coconut.

SENATOR HILL: Doctor, the patient understands fully whether he has a drainage case or a clean case, does he not? DR. OCHSNER: You bet he does. After six weeks or so. We all know how the mortality rate is increased by letting appendix cases progress to suppuration before operation, how much longer they have to be hospitalized and how much greater the nursing care and general hospital expenses are. Patients suffering from acute appendicitis who are operated on before the appendix ruptures are usually out of bed in a week, out of the hospital in ten days and back at work in three weeks, while those patients when the operation is delayed until the appendix has ruptured are rarely out of bed in less than three weeks and out of the hospital in less than six weeks. The fact is that in nondrainage cases recovery is practically 100 per cent while intestinal adhesions develop in nearly all drainage cases, which may cause discomfort and digestive disturbances for months and even years.

SENATOR HILL: They often get a hernia. DR. OCHSNER: Often get a hernia, yes. SENATOR HILL: Which means another operation? DR. OCHSNER: Yes, indeed. And not only that, but the mortality is much greater. Very few men can handle drainage cases with less than 10 per cent mortality, and the mortality in the nondrainage cases is not more than 1 per cent. That is a big difference. And then there is the expense and all. Delay in many other surgical and also medical cases is just as harmful. I just give that illustration. Why is it that patients under socialized medicine in Germany get less prompt medical attention in urgent conditions than patients do under our system of private practice? The answer is that most doctors are overworked and become discouraged and even disgusted, because patients are calling up the physicians at all hours of the day and night for mere trivialities. And they magnify the importance of the operation, the disease. "I am very sick. You have got to come right away." In private practice that is not the custom. It is a common practice both in Germany and in England for doctors to disconnect their telephones at night when they retire and even in the daytime to pay no special attention to insistent calls because most of these do not require prompt attention. Baeumer makes the statement in his book, based on personal experience with the system and after a careful check of the call books of krankenkasse patients that between 65 and 70 per cent of all calls are unnecessary, the government pays for them, consume the time and energy of the physician and the resources of the krankenkasse, and here is the important part: and pre-

vent adequate medical service and hospital care for the really sick. His paragraph describing how many krankenkasse patients abuse their privileges is very illuminating and interesting.

Do patients get better medical services under socialized medicine? The claim is made that under socialized medicine a larger portion of the population would get better medical service. Brend states in his book that the average time spent by panel physicians in making a diagnosis is from three to four minutes. He makes the statement that many krankenkasse physicians see from 20 to 40 patients during a two hour consultation period and that there are some who see as many as 60 to 80 patients during two hours. Well, the kind of service we gave in Leipzig when I was an assistant there I think I have told two of you gentlemen. I think I am the only American born and educated physician who has ever been a krankenkasse physician. I served as a krankenkasse physician. The only difference was that I did not get paid. But I did have the experience of the other men who got paid, and we gave that kind of service.

A prominent Chicago physician shortly before World War II visited a panel physician in England and went with him to see how he handled the waiting patient problem. As the doctors stepped into the waiting room the English physician said to the more than 40 patients seated there "Will those of you who are troubled with headache please stand," and 6 stood up. He then reached into his desk and took out six identical printed prescriptions and handed one to each of the 6 standing patients and dismissed them.

SENATOR HILL: Doctor, I think it was Dr. Robert Morris of Philadelphia who said that a headache was simply a bell in the tower ringing showing there was something wrong somewhere else, and that might be in many different places. DR. OCHSNER: Of course. The 6 might have had six different causes for the headache. They got the same medicine. It was the same thing in Leipzig. You could not write out a prescription suitable to the patient. You wrote out "No. 16." It is just ridiculous.

SENATOR HILL: Was that German efficiency? DR. OCHSNER: That is right. SENATOR HILL: German efficiency. DR. OCHSNER: Yes.

Then the physician said "Will those of you who are troubled with a cough please stand," and another group got up and he followed the same procedure. The others he took 1 by 1 into his private office for a few minutes and by exactly 4 o'clock, or in two hours, the office was empty of patients. That gives an average of three minutes to each patient. How could he go into the details of the causes of those sicknesses? An English writer in commenting on the foregoing facts rightly observed that these are not abuses of compulsory health insurance but inherent faults of the system. Sir Francis Neilson states that "the practice of medicine in England is reduced to a question of physical endurance without regard to brains or ability."

SENATOR HILL: Doctor, in that connection do you know how long the British have had this system? DR. OCHSNER: I cannot tell you exactly, but the Germans have had it sixty-three years, and I would say the British had it about thirty years.

SENATOR DONNELL: About 1911, was it not, that it began in Great Britain? DR. OCHSNER: About thirty years. I did not remember the exact date.

Are more complete records kept under socialized medicine? The claim is constantly made by the proponents that under such a system much more complete records of cases would be kept. This claim is disproved by the following facts: In the krankenkasse ambulatory clinic in Leipzig where I was an assistant no records were kept except the name and diagnosis of each patient. There was no record of the treatment the patient received nor was there a careful physical examination made nor any time spent in advising the patients in matters of personal hygiene. This last is one of the most important functions of the private practitioner of medicine, especially in nose and throat cases. I was there ten weeks. I did not have any time. One after the other came in.

Here comes the worst of the whole thing: It encourages malingering. The tendency of many patients to run to the physician for every trifling or imaginary ailment and of malingering has a very bad effect not only on the professional relations between the physician and his patient but on the mental attitudes of physicians as a whole. When a private patient consults his physician the latter naturally assumes that there is actually something the matter and he accepts the statements of the patient at their face value. He makes every effort to determine the nature of the ailment in order to relieve the condition; but in compulsory health insurance practice the physician sooner or later quite naturally and almost inevitably gets the mental attitude of "Now what insignificant matter is he here for again today?" or here is the important thing, "What is the scheme today so as to get something out of the krankenkasse fund?"

The practitioner of medicine obviously becomes a detective instead of a diagnostician and therapeutist, and such a mental attitude on the part of a large portion of the medical profession is fatal to the best type of medical practice and service. Do the American people want that kind of medical service? This bill if enacted into law would inevitably greatly lower the quality of medical and dental services to a large percentage of our citizens. When we substitute government control in medicine and dentistry for independent individual action we stifle self expression, individuality, initiative, courage, confidence, enthusiasm and industry in both doctor and patient. Another serious defect of socialized medicine is that it encourages quackery. Four years after compulsory health insurance was adopted in Germany there were 1,713 lay practitioners, "charlatans" and "quacks" in Germany, and in 1929, the last statistics I have been able to get, there were 12,413. Germany has been called the "happy hunting grounds for quacks." There is a belief deeply seated in the human mind that the thing which you can get for nothing is worth nothing. This accounts for the fact that many of the members of the krankenkassen value the services of their physicians lightly and spend huge sums in running to "quacks" and in buying all sorts of "patent" medicines. There is an increase, then, from the beginning four years, from 1887 to 1929, from 1,713 registered quacks to 12,413 in Germany. While studying in Hamburg I got very well acquainted with about forty of the attending men, what we would call interns here. While studying there I was told by a number of the medical men that it was a very common practice for krankenkasse patients to go to a panel physician principally to get sick benefit allowance and to step right out of the office, throw away the prescription the doctor had given them and go directly to the office of a "quack" for advice. One of the worst features in any and every form of compulsory health insurance so far devised or, as I believe, can be devised, is that it unquestionably lowers the confidence both of the individual and of the public in the efficiency and integrity of the medical profession.

Now we naturally come to the question "Does socialized medicine increase or decrease the number of days of sickness?" That is one of the things we always claim. Get there early and you will not be sick so long. The average number of days of sickness per insured member, which was 5.9 in 1885, shortly after the sickness insurance law was enacted increased to 6.19 in 1890 and to 9.19 in 1913. The average loss from sickness of the American laboring man before World War I was 6.2 days per year. Simons and Sinai say that the number of days lost because of sickness has increased in Germany more than two and one-half times from 1888 to 1929.

The question naturally arises "What are the relative costs of medical service under socialized medicine and our present system?" According to Potts it increases the paper work so frightfully that in order to run the system they have almost as many secretaries and clerks on the paper work as they have doctors in any area. I will not go into the details of that.

SENATOR HILL: We see something of that paper work in the Army and in the Navy too for that matter. DR. OCHSNER: Yes. And here they take histories and records like that, all of that time and money is spent in keeping track and ferreting out these fellows who pretend to be sick. The number of hospital beds in Germany increased from 70,000 in 1844 to 471,125 in 1927, an increase of approximately 673 per cent, while the population increased only about 33⅓ per cent in the same period. If that hospitalization would be so good for them they would not have twice as many days of sickness, would they? This resulted because patients sought admission to the hospital for all sorts of minor illnesses and pretended sickness when not really sick. With this fact I was deeply impressed in Hamburg. I got there about the middle of November 1896 and almost daily patients were admitted to the hospital for lumbago—one of the most difficult things to diagnose—so that one of the pavilions for such patients was overfilled in a few weeks. When the mild weather came on toward spring the pavilion became almost empty about as fast at it had become filled in the fall. In the meantime they had had free care, free treatment, and took away attention that should have been given to really sick patients.

During my postgraduate studies in Hamburg I was associated with about forty physicians and they told me many things about the evils of socialized medicine. They told me that it was not the most efficient and conscientious panel physicians that had the

largest practices but those who were most liberal with sickness benefit certificates. They told me that a new physician in a neighborhood is always more popular because the people expected to get more sickness certificates from him than from the longer established physicians. One author describes compulsory health insurance as a curse. He says that it destroys the morale not only of the insured but of the medical profession. Another writer goes so far as to say that compulsory health insurance prevents the lower classes from rising. Another writer expresses the same idea in the words "Irresponsibility leads to pauperism" and again "Guardianship by government of normal adult man or woman has sooner or later either ended in disaster for the government which adopted it or in the servility of those governed." I would add that the servility of those governed usually precedes the disaster. Lewis Browne in his "Stranger than Fiction" says "The worst evil of continued oppression is not so much that it cripples the bodies of its victims as that it crushes their souls. It robs them of courage and self reliance." The same thing can be said with equal truth and even greater emphasis about those receiving things they have not honestly earned and in addition to crushing their souls and robbing them of their courage and self reliance it has a tendency to make them leeches, parasites, hypocrites and even outright liars. It is a fundamental, psychologic error to do everything and provide everything for the weaker members of society. The only way they can ever hope to develop strength is by making strenuous effort to overcome obstacles. Striving makes man stronger, while sloth and idleness weakens not only the body but also the will. Ambition is destroyed in a large percentage of the population when all the provisions of socialized medicine are put into force.

If this bill should become a law it would open the doors to an evil such as probably no law on our statute books today offers. It would lower the stamina and integrity of a large percentage of our citizens at a time when integrity and honesty are two of the greatest needs of the times. The integrity of the people of this earth must be raised and not lowered if civilization is not only to progress but to survive. That any one who is familiar with the actual workings of socialized medicine and state medicine and who has carefully studied the provisions of Senate bill 1606 can honestly claim that this bill if enacted into law would not be socialized medicine and state medicine seems incredible. It would actually put under the control of the federal government the medical care of at least three fourths of the population of our country. It would certainly be socialized medicine and the first step to totalitarianism just as it was in Germany.

(Senator Donnell questioned Dr. Ochsner as to his career in medicine.)

SENATOR HILL: My father was a doctor. I remember well as a small boy going with him to Chicago and from there to Rochester, Minn. He took that trip so that he might visit your clinic in Chicago and that he might also see Dr. Murphy's work and go on out to Rochester. I remember as a small boy there in Rochester his telling me of the enormous amount of work you and your brother were doing at that time. DR. OCHSNER: Well, we did.

SENATOR DONNELL: Has the Chicago Medical Society passed any official action with respect to S. 1606, the Wagner-Murray-Dingell bill? DR. OCHSNER: Oh, yes.

SENATOR DONNELL: What is the substance of that action? DR. OCHSNER: Distinctly opposed to it. SENATOR DONNELL: Distinctly opposed to S. 1606? DR. OCHSNER: Yes. And just last week in a meeting we unanimously, without a dissenting vote, endorsed methods of prepayment medical service.

SENATOR DONNELL: There has been organized in Illinois rather recently an organization under the corporate law of the state to carry that plan into general effect, has there not, Doctor? DR. OCHSNER: That is right. Prepaid medical service.

SENATOR DONNELL: And that plan is now being projected over a large part of the country under the auspices of that organization. That is correct, is it not? DR. OCHSNER: Yes.

Statement of Dr. George A. Unfug, President, Colorado State Medical Society

DR. UNFUG: I am a graduate of the University of Colorado Medical School, 1926. After a year's internship I engaged in general practice for four and one-half years and then took a year's postgraduate training in radiology. Since that time for about fourteen years I have been in the practice of radiology in private practice in Pueblo.

I was a delegate for many years, and am now president of the state society.

SENATOR DONNELL: Will you tell us, Doctor, please, what is the Conference of Presidents and Other Officers of State Medical Associations? DR. UNFUG: It was merely a study group who met, as you might call it, consisting of the presidents, presidents-elect, the secretaries, executive secretaries and editors of the various state or regional journals.

SENATOR DONNELL: How large an organization is the conference? DR. UNFUG: Well, it varies. We have in our by-laws once a member, always a member. It is a new organization organized about a year ago. It was not the intent of this organization to have witnesses appear for the hearings on S. 1606, because we would much prefer that individual physicians express their views before this committee so that the members of the committee could learn the attitude of the physician in practice, the physician who will have to furnish the services provided for in S. 1606 should it become law.

I have no doubt that the physicians who have testified have presented this attitude, but there has been so much adverse propaganda regarding some of our national medical organizations that I fear the members of this Senate committee might forget that these witnesses speak for the physicians of the United States and not some inanimate body or building in Chicago. Since individuals were denied this opportunity, our organization asked for and was granted the privilege of appearing.

I might insert here that until yesterday I did not know that any state society had been invited to appear or was permitted to appear. As the name implies, we represent the presidents and other officers of state medical associations. These persons are in contact daily with the other medical practitioners throughout our country and I believe are informed of the attitude of those practitioners. Physicians are interested in the health of the citizens of this country and proud of the part they have played in making this one of the healthiest nations, if not the healthiest nation, in the world. I believe that when comparisons are made between our country and countries with similar population groups, using the same methods of computing statistics, we will stand at the top of the list in regard to health. This has been denied by proponents of the bill, but I ask that you study carefully any vital statistics they have given you to see whether or not they are computed on the same basis for all countries before coming to any conclusion regarding comparisons between our country and others. I hope that you will also demand the names, populations and classes of the population included in their vital statistics of the countries which the proponents claim excel us in health records. I have yet to see these countries listed by name in any speeches or published articles.

Even proponents of socialized medicine admit that our citizens receive the highest quality of medical care. I quote from an address made by Mr. A. J. Altmeyer, chairman of the Social Security Board, in Chicago, Dec. 2, 1945: "I believe also that the standards of good medical practice and of good hospital care in this country are probably second to none in the world today. The medical profession and hospital administrators have a right to be proud of the great progress these standards represent." Why then do physicians have to fight continually for the preservation of the system of medical practice that has produced this high quality of medical care? Proponents of socialized medicine say we are selfish and at the same time admit that the medical profession donates free service that amounts to millions of dollars annually. I might add that estimates of free service rendered by physicians does not include the charitable services performed daily by the majority of physicians in their individual offices; and I am not referring to the poor credit accounts—I mean the cases that never get into the ledger. If the proponents do not openly accuse us of selfishness they do so by inference. You have undoubtedly heard it said that we should not oppose this legislation because we have the choice of participating or not. I have shown you the fallacy of that statement. The attitude of the true sponsors of this legislation is revealed by the chairman of the Social Security Board when he testified before this committee. He replied to a question by a member of this committee in reference to physicians who refused to participate "Yes. If they"—some physicians—"went on a strike against the patients, the patients could not select them." Does this not imply that the present chairman of the Social Security Board intends to force the physicians of this country to participate in the scheme? I call your attention to the fact that the bill states that the Surgeon General will prescribe such rules after consultation with the Social Security Board.

I am frank to admit that the practice of medicine is highly individualistic, and as individuals we may be as selfish as members of any other group, but I deny that our main reason for opposition is based on selfishness. We are opposed to socialized medicine because it leads to an inferior type of medical care and it is very expensive. Any one who wishes to be fair at all will admit that the medical profession of the United States has always supported measures, and initiated most of them, that will improve the quality of medical care and elevate the standard of public health. As a few examples I cite the classification of medical schools, the inspection and approval of hospitals, the certification of specialists by the various specialty boards and the organization of the National Board of Medical Examiners. These are measures which were initiated and have been continued by the United States medical profession without outside support of any kind. Other measures which were started either by or in cooperation with medical men and which would soon vanish should the medical profession drop its support are the various state boards of medical examiners and most public health measures.

Most modern health promoting organizations originated in this country under our free system of medical practice. I list a few: the National Tuberculosis Association, the American Heart Association, the American Cancer Society, the National Safety Council and numerous other organizations having to do with diabetes, epilepsy, mental hygiene, arthritis and other conditions.

Another proponent of the measure has stated that this would give the young man just out of medical school an opportunity to make a decent living. I do not know about that, but I do know that it would place him on the same basis as the general practitioner who has been in practice twenty or twenty-five years. It is the same in medicine as in most professions: experience is a great teacher and, in general, the practitioner with years of experience deserves the greater financial return. In addition, under this bill the competent or skilled practitioner would be lowered to the level of the incompetent or unskilled. All are equal under the bill. The only differentiation it makes is between general practitioners and specialists. Among the individuals of each of these classifications there is a wide variation in competence or ability. In any noncompetitive system such as S. 1606 would create it is a foregone conclusion that the quality of medical care would sink to the level of the type practiced by the less competent practitioner. Physicians are human, after all, and where there are no incentives human beings do not progress.

Should this bill pass, our medical schools would have great difficulty securing students of the caliber that make good physicians, if the attitude of students with whom I have talked is any criterion. The cold facts indicate that most students enter the medical profession because they want to be their own bosses. This is impossible under S. 1606. Some have stated to me that they will quit medical school if S. 1606 becomes law. To me this is one of the greatest dangers inherent in the bill. If there is no incentive to the student entering medicine, if he knows he will be on the same basis after twenty or thirty years of practice as he will be the first year after he completes his training, what type of student will be attracted into medicine? The answer is obvious. The good student will look elsewhere to fields where initiative, hard work and ambition are rewarded. Even the proponents stress the shortage of physicians; can we hope for improvement under this bill?

I would like to insert here a personal criticism of the bill prompted by my interest in my own field of radiology, or x-ray diagnosis and therapy. For the sake of emphasis and brevity, and because it expresses my personal views, I shall quote from a letter addressed to the chairman of this committee by Mr. Mac F. Cahal, executive secretary of the American College of Radiology:

> This bill offers peculiar significance to the medical specialty of radiology. Paragraph G of section 214 of the bill is vague and somewhat ambiguous as to exactly how and by whom x-ray services shall be rendered beneficiaries of the act. Apparently the bill would provide adequate benefits for x-ray diagnosis and therapy to be rendered by specialists in this field in the case of ambulatory patients. On the other hand, in the case of hospitalized patients it appears that the cost of these special medical procedures must be borne by hospitals from the per diem they receive for hospitalization.
>
> Obviously there would be a tendency to adulterate the quality and the quantity of radiologic services rendered hospitalized patients if hospitals were compelled to absorb these costs from the per diem allowance for hospital care.
>
> It should be pointed out too that the practice of x-ray diagnosis and therapy is a medical procedure and the wisdom of paying hospital corporations to furnish these services is open to question.
>
> The interests of beneficiaries under the act would be much better served if services rendered by radiologists in hospitals were treated exactly as other medical services and paid for separately on a fee basis.

I note that few physicians have testified in favor of title II of this bill. This in itself is significant, but more significant is the fact that few physicians supporting this legislation are from rural areas; they are from the large metropolitan centers, yet the poor health conditions in rural areas are frequently used by them as an argument in favor of socialized medicine. Few of them are even in active practice. I wonder if any of these witnesses would be willing to move to these rural areas and practice under the conditions imposed on physicians by title II. I believe it would be much more helpful to this committee to have the opinions of physicians from these rural areas.

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In the first place, two witnesses before this committee, testifying in favor of the bill, used figures, both supposed to be authentic, that vary greatly. One witness testified that there was a loss of 600,000,000 man days annually due to illness and accidents. Another witness gave this figure as 500,000,000. How can you place any confidence in any of these figures prepared by government employees when there is as much variation as 20 per cent? A difference of 100,000,000 man days is not insignificant.

We believe that voluntary plans can accomplish everything that can be gained from a compulsory plan and still maintain the type of medical practice that has produced the highest quality of medical care in the world. We believe that, by cooperative effort between physicians and government, legislation can be enacted that will utilize existing facilities of these voluntary plans and give the American public a truly constructive program for the betterment of the nation's health.

In Colorado we have had our Colorado Hospital Service, or Blue Cross, in operation for several years. It now covers approximately 35 per cent of the population of the state. Much has been said regarding the rural population in regard to medical care. In Colorado these groups have been organized in several counties on a countywide basis, most of them in recent months. It has been our experience that 25 to 30 per cent of the entire rural population of a county can be enrolled within two weeks after the organization machinery in a county is completed. We also have a medical service plan in operation known as Colorado Medical Service. It began operation in May 1942 and was confined to the city of Denver. At the annual meeting of the Colorado State Medical Society in September 1945 it was voted to operate Colorado Medical Service on a statewide basis. In spite of the fact that little was done until about one month ago as far as the state was concerned, Colorado Medical Service on May 11, 1945 had 125,000 subscribers, or approximately 12 per cent of the total population of the state. Approximately 25 per cent of the population of Denver subscribes to Colorado Medical Service. About 5,000 new subscribers are added each month. No attempt was made until one month ago to secure participating physicians throughout the state, and only one letter has been sent out. Almost no personal solicitation has been made. In spite of this over 800 out of about 1,300 eligible physicians have agreed to participate. I believe these figures prove that the public desires a voluntary method of budgeting its medical expenses. It is my own opinion that the government could serve the public best by encouraging these voluntary systems rather than attempting to regiment the public and the physicians. These plans are flexible; they can be utilized to include various groups. At the present time we are negotiating with the Veterans Administration so that the veteran may be cared for at home by a physician of his own choice.

I have conferred with our local county commissioners relative to the care, through our Colorado Medical Service, of the indigent and the beneficiaries of old age pensions. They were very enthusiastic, and at a meeting of the Association of County Commissioners and Clerks of the Fourth Commissioners' District held Aug. 29, 1945 they presented the following resolution, which was adopted unanimously:

> That whereas the Wagner-Murray-Dingell bill and various other bills have been offered in the national Congress which might lead to an absolute socialization of medicine;
>
> And in view of the fact that medical care of pensioners and general relief cases has been suggested on a prepaid medical care plan;
>
> We do therefore urge the Colorado State Medical Society to make a thorough investigation of the possibility of such a plan, with the view of putting it into operation if such a plan be practical. We therefore express a general approval of such a plan and offer our full cooperation to our local and state medical societies in any investigation necessary to determine the usefulness of such a plan.

This commissioners' district comprises fourteen counties in southeastern Colorado and includes two of the three most populous counties in the state. The major difficulty in putting such a plan into operation is that the federal government prohibits any deduction from benefits paid old age pensioners.

MAY 31, 1946

HONORABLE JAMES E. MURRAY Presiding

PRESENT: Senators Murray and Donnell.

Statement of Dr. Franz Goldmann, Associate Clinical Professor of Public Health, Yale University School of Medicine

DR. GOLDMANN: The factual statements I am planning to make are based on twelve years of practical experience in Germany, two years of practical experience in Luxembourg, intensive study of the problem in France and countless conferences with hundreds of experts, medical and nonmedical, from Great Britain, France and a number of South American countries. May I say that the opinions I am expressing are my own and must not be construed as reflecting the opinions of the institutions of higher learning with which I am affiliated.

It is important to realize the reason why a growing number of countries throughout the world have adopted such programs.

These are the reasons:

1. The recognition of the inadequacy of individual savings;

2. The recognition of the weakness of what is called the public assistance approach—or, using American terminology, "the relief system."

And, finally, there is the recognition of the limitations of voluntary health insurance.

The principle of public assistance or relief and the procedures necessary for its implementation have inherent weaknesses. Restriction of medical care at public expense to persons in need jeopardizes preventive action. It comes too late to prevent complications, serious illness and chronic stages of illness. It comes too late to make the most economical use of taxpayers' money. It requires, by necessity, the definition of the conditions under which medical care shall be made available; and that means a "means test." That is the very thing a self-respecting citizen detests. It involves tremendous administrative costs and red tape, and it discourages practice of private medicine. These are the reasons why the general opinion of all experts abroad was against the continuation of that system and for its reduction to the irreducible minimum.

Now, as to voluntary health insurance, the point may be stated as follows: Voluntary health insurance is of limited applicability. It has been tried out in a score of countries for at least a hundred years. From this experience we may say that voluntary health insurance can provide for selected services at reasonable cost but not for complete medical care. If the plan is operated on the basis of the individual practice of medicine and the fee for service method of payment, it can serve selected economic groups, those able to pay the full contribution, but it cannot be utilized by the large number of people struggling to make ends meet and maintain the pride of economic independence. Moreover, there is great danger of multiple financially weak and competing organizations developing in the same community. Vested interests are created that cannot be dislodged later when better plans are under consideration. Let me repeat: these are the three reasons why one country after the other turned to compulsory health insurance programs. It has to be borne in mind that this compulsory health insurance system, as we have it today in some thirty countries, usually is part of a comprehensive system of social insurance or social security covering all or a large number of the following hazards: sickness, maternity, injury, temporary disability from sickness, maternity and injury, long term disability from sickness and injury and death from sickness, maternity and injury.

(*Dr. Goldmann traced the history of compulsory sickness insurance.*)

At present—or shall we say before the war—there were countries where from one fifth to one third of the total population only were covered, and there were other countries where about two thirds, and in some cases even four fifths of the population were included.

The second trend which deserves mention is the trend to rank cash benefits second to medical care. When the plans were put into operation, way back in the eighties, the primary emphasis was on the compensation of the sick person for disability. In other words, the person received a certain amount of money, usually a fraction of the wages, and was supposed to use this money to maintain a somewhat decent standard of living during the time of his disability. Little attention was paid to the more important point, namely the restoration of health and preventive service. That has changed completely over the sixty years which we can now study. It has changed completely because it was realized that it was utterly wasteful to compensate somebody for a condition such as a disabling illness without doing much about the elimination of the cause of that disability; that is, without providing the best medical care for this person.

Now, all that change in a growing number of countries has taken place, and at present the majority of countries which have relatively well developed programs offer the following services: physicians' services, specialists as well as general practitioners in the homes of the patients, the offices of the doctors, the clinics and hospitals; maternity services, including prenatal, obstetric and postnatal care, by physicians, graduate nurses, nurse midwives—which is a special feature of many programs abroad—and housekeeping aids, hospitalization, including care in general hospitals, special hospitals and in convalescent homes. And this feature of care in convalescent homes is a very important feature in some of the programs. Finally, most of the programs provide for certain drugs and for certain appliances.

The next trend is the very definite emphasis which was placed on the improvement of the quality of service. And I wish to point out that one of the most important features in foreign programs is the exclusion of nonmedical practitioners from the service, on the theory that this service should be limited to those men and women who represented the highest standard of training and experience.

I do not want to leave any doubt that the situation is far from being ideal. There were difficulties. The one difficulty was that in every country the license to practice medicine, dentistry and so on of course entitled to participation; and there was very little that these countries could do to see to it that additional requirements were read into the law; because, quite properly, the medical, dental and other professions insisted that, once somebody was licensed, he had to be admitted. And that made it very difficult to see to it, shall we say, that people who were not the very best people would drop out.

The other drawback was the free choice principle. That has to do with the first one, because if you adhere to the free choice principle you have got to admit anybody who is duly licensed, and you cannot do anything beyond that. Furthermore, and this is probably the most important lesson we can learn, when these systems were set up the system of individual practice was the prevailing practice. In this country the term "solo practice" is very often used to denote that. One country after another realized that it was of great importance to adopt an entirely new policy, namely the policy of putting the organization of professional services on the basis of what is called the group practice of medicine. That means a system under which a varying number of doctors and representatives of other professions work together in teams, pooling their equipment and their auxiliary personnel and their income and, of course, their expenses. All of that served to improve the quality of care and at the same time to reduce its cost.

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Contrary to widespread belief, with very few exceptions there has been no use made of the system of salaried physicians. Just the opposite is true. The prevailing policy was to utilize the services of those in private practice to make the participation in the program possible for any and all of those who were willing to participate in the program. What it means is this: that the participating physicians served patients who paid directly or, in some instance, promised to do so, and along with patients on behalf of whom the insurance plan, or a public agency such as the welfare department, pays the bill. That is the usual pattern you can find in nearly every country. Here too were some shortcomings, and I would like to point them out, because I think it is important to realize these shortcomings. In a number of countries the doctors tried to take on too many patients; which, of course, was not conducive to the effective practice of good medicine. So, some countries finally set ceilings on the number of patients the individual doctor should accept, and I wish to point out that that ceiling applies to patients covered by the insurance program. A pattern which has been followed in a good many instances is one doctor for about 600 insured persons. That means that, together with his family and dependents, one doctor would serve approximately 1,100 to 1,200 persons.

Finally, the principle of free choice of physician is the prevailing principle in the organization of all these programs. The patient is free to choose from all participating physicians, for all those participating physicians whose offices are in a certain area. The patient receives a list. In Great Britain

this list is referred to as the "panel"; hence the term "panel system." And the patient may choose from the names of any of the doctors whose names appear on the list. However, free choice is not unlimited. There are restrictions on it. One restriction is in regard to specialist service. It is a rather common policy to expect the patient, first, to see his general practitioner, his family doctor or the physician who usually is in attendance before he goes to the specialist. This was done as much in the interest of specialists as in the interests of the patient himself, who of course cannot be expected to know precisely what specialist he would need. There are also some restrictions in the way of the geographic area; in other words, free choice applied to doctors with offices in that particular district: although always exceptions were made when there was a good justification for doing so.

The method of paying physicians and others may be summarized as follows: The flat rate system is the prevailing method. That means that the doctor, and the same applies to other groups, receives a flat rate, which is based on two things. It may be based on the number of persons on his lists, so much per person on the list for a certain period of time. That is what the British call the capitation fee and which you find in other parts of the British commonwealth but also outside the British commonwealth. In addition to that they receive what is called a mileage allowance, which takes care of the time and expenses involved in attending patients in their own homes. In some instances the flat rate is not based on the number of persons on the list of the practitioner, but on the number of sickness cases attended during a certain term; let us say, during a month or during a period of one term. In such case, of course, there is some relationship there.

The second system which can be found, but which is not the prevailing system, is the fee for service system. Wherever it is used it is based on a special fee schedule agreed on between the administrative organizations and the professional organizations concerned. In some countries the two systems are being used side by side, the typical example being New Zealand, where the fee for service method was introduced in November 1941, and the flat rate system before that had been introduced in March 1941.

In a very few instances the salary method is used, based on part time or full time work. It is very significant that if this system is used it is used primarily to compensate doctors in rural or thinly settled areas, where, of course, there is a grave problem, as you all know. You find that in parts of Australia and parts of New Zealand and in rural areas of other countries, but it is the exception rather than the rule.

Finally, a few words about administration: The one very decided trend which must be emphasized as being of great importance is the trend away from lay control to professional supervision and direction of all medical matters. So we find that increasingly physicians and dentists and nurses and other groups were charged with administration of medical care service, each group being responsible for its own field, while the administration of cash benefits was left to the nonmedical people. That is, again, a broad statement, because there are tremendous variations. But to give you an example, and I am choosing this deliberately: In England the approved societies administrator the cash benefits, and the insurance committees administer the medical services.

In this connection it is important to note that the problem of providing for a suitable administrative organization proved a very difficult one. The general principle was to vest self-governing statutory bodies, as they usually are called, with administrative responsibility, rather than utilizing existing public agencies. In carrying this principle of self government out, the bodies, the administrative bodies, were composed of representatives of the insured persons, the employers—for reasons which I shall explain later—and, in a number of instances the representatives of the public health services, so as to bring this whole administrative organization into close relationship with other services. What it meant was the creation of an autonomous semipublic agency. And the drawback, of course, is obvious, and I wish to emphasize this point, because, for instance, in other countries the medical profession is very anxious to have a similar administrative organization.

The drawback is this: that by having two sets of administrative units, one the public agencies responsible for public health in general and another one the insurance organizations responsible for the medical care of the persons covered by the program, you are creating a state within a state and you are separating medical care programs from all other services. Even if you try to overcome this difficulty by what usually is called the "coordinating committee," it is well to bear in mind that coordination is, of course, a typical ersatz product, and while it can go very far toward bridging the gap, it cannot eliminate the difficulty of having two sets.

Another difficulty was the multiplicity of administrative agencies; not only a large number, but quite different types. And that became necessary because at the time when these programs were introduced there were vested interests; there were plans in industry; there were voluntary organizations; there were fraternal orders, clubs and what not. In an effort to appease these groups, these governments unfortunately have often accepted existing administrative units, inadequate as they were, and vested them with responsibility for the administration of the new service. The result was not good, and I shall give you some pertinent figures on this in a few minutes.

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I have been studying the medical care programs in this country, and I was quite interested in getting details about administrative costs, of course. Here are some of the facts, and I am taking now the Michigan Medical Service and the California Physicians Service. Of course, I could as well take others, but I am taking them because they are some of the most advanced medical society plans, the voluntary health insurance plans sponsored by medical societies. The Michigan Medical Service paid 20 per cent of its total income for administration in 1940, 15.6 per cent in 1941, 15.4 per cent in 1942, 12 per cent in 1943 and 11.4 per cent in 1944. The California Physicians Service paid, in the early forties, 18.9 per cent on administration, and the proportion was even higher before that time; however, I have not been able to get more recent reports, and there might have been a decline. What I want to bring out is this: Of course, any plan requires money for its administration. It does not make any difference whether it is voluntary or compulsory. But if you look at these figures, which refer to plans with strictly limited service—these are very limited services for all practical purposes—you find that the very large portion is spent on administration, and compare that with programs which administer a wide variety of services, plus disability, and I believe the conclusion is perfectly obvious: There is no point in trying to accuse foreign programs of wastefulness in administration. I say that although I am the last to say that the administration was ideal.

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Now, as to the administrative personnel, in the newspapers I read certain statements which came as a surprise to me. That is why I went back to the sources. And here are the figures, which can be checked by looking up the original: In Germany the administrative personnel needed for this whole program—and, I repeat, medical care plus disability insurance and all the various types of medical care—can be computed on the following basis: approximately one employee for every 2,000 persons receiving service. That is an approximation. Now, that changes a little bit over the years. Needless to add, after the Hitler régime came into power the ratio became, of course, affected accordingly. The number of people needed, of course, grew, simply because there were political interests which entered the picture. This personnel includes all the office personnel, and the office personnel comprises about four fifths of the total. The field workers, people who go to the homes of the patients to visit them to find out about conditions in the home, the auxiliary personnel, including chauffeurs and what not, and the medical and dental and nursing personnel employed in administrative work are also included.

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Another point is that disability figures are influenced by extensions and improvements in medical care. As soon as the period of hospitalization is extended, as it has been, from sixteen weeks to twenty, or from thirteen to twenty-six, or from twenty-six to thirty-nine, as soon as new services are added such as convalescent care, which in general is given for from four to five weeks, and as soon as there is more emphasis on thorough treatment and preventive medicine, it is perfectly obvious that the period of disability is tending to increase, because that merely reflects the fact that more and better service is made available, and people want to avail themselves of this service.

Finally, the figures are influenced by changes following the extensions and improvements in the waiting period or in the duration of benefit. If the waiting period is cut down from seven to four days or from four days to one day it is perfectly obvious that you have more patients, a larger number of

patients. If the period of disability payment is extended from twenty-six to fifty-two weeks it is perfectly obvious that you must have a larger figure, because now you have a lot of chronic conditions, which otherwise would not appear if they were extended only to thirty weeks.

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Let me now summarize what I believe can be stated in general terms: The principle of compulsory health insurance against sickness has proved to be sound, appropriate and in accord with democratic ideals. At present it is applied in some thirty countries. The existing programs, imperfect as some of them are, have benefited the patients, participating members of the health professions and hospitals, and the countries at large. Many of the shortcomings carried over from the early stages of development have been removed. Some have survived and need to be eliminated. Noteworthy is the steady endeavor of more countries to make more and better provisions, the British plan for compulsory health service affording the best example of this trend. However, despite many advances, these schemes require considerable room for improvement. No country ever has expected compulsory sickness insurance to provide complete medical care for all the people. The reason is obvious. A program based on the application of the insurance principle can serve only persons able to make regular prepayments. It is hard to establish and to administer in thinly settled areas. For these reasons all the countries having compulsory sickness insurance programs also maintain complementary programs of medical care financed out of general tax revenues. Many countries permit voluntary health insurance programs to operate, provided these plans meet reasonable standards.

I should like to say a few words about the reasons for shortcomings. The first reason is that actual practices in some countries were at variance with principles. For instance, we have an inadequate spread of risks and costly administration by allowing the continuation of small units. That is a very basic point. The second point: We have not only the continuation of small units, but we also find that there is a separation of insurance programs from all other health services, something which is not the ideal solution to the problem of devising a constructive program of national health. Finally—and that in my personal opinion is the most important shortcoming—until about five years ago there was very little emphasis on the development of group practice of medicine. It was only in recent years that this idea has been advanced vigorously. If that had been done earlier, I believe a good deal of the criticism would not have arisen. The British, to use this as an example, are perfectly aware of the limitations of their program. On the other hand, they are also perfectly aware of what they call the immense gains which they have made under the program. I believe that that broad statement applies to the majority of all countries, judging from the opinions I have heard. The criticism of foreign programs very often is based on impressions rather than facts. Very often we find that people use the writings of opponents of the program, whose names were more or less unknown in their own countries. We also find a good deal of misinterpretation of statistical data, and these points have to be mentioned too.

SENATOR MURRAY: Doctor, you made some observations with reference to the character of the medical care rendered under the compulsory system in Germany. Some witnesses have testified here with reference to that matter and have pointed out that it has resulted in a very serious deterioration of the quality of medical care that the people receive. Some examples were given where, as the result of the physicians' undertaking to handle too many patients, they would have them assembled in a room, and the doctors would ask all those suffering from a headache to please stand up. At that point a group would stand up, and he would give each one of them the same prescription within a very short period of time. Then he would ask all those suffering from a cold or from some other ailment, and he would treat them likewise, and in that way go through a great, large group of people; indicating, of course, a very poor character of medical care being rendered in that country under the compulsory system. Have you any comments on that situation?

DR. GOLDMANN: I have seen "rush medicine" in many countries. I have heard about these complaints, and I happen to know that such things happen nearly everywhere. Of course, I am not willing to defend them at all. I think it is merely an indication of the fact which I pointed out before, namely that this whole problem of adequate organization of professional service has not been tackled as it should have been. I have had a chance to see the clinics of the German insurance organizations, where I noticed that the finest type of medical care was given; there was no doubt about that. I have seen the offices of very many men, outstanding specialists and general practitioners, and I might say that a large majority of them did a good job. In every country you will find a certain number of people who practice what is usually called "rush medicine." You will find the number to be larger if there is no limitation on the number of patients they may accept. A doctor in private practice may say "I am sorry. I cannot take you." That happens every day in this country. You are told that four weeks from today you may have an appointment, or that six weeks from today is the day of your appointment. If you are serving an insurance program you cannot tell these people to come four weeks from today. You cannot do it. But the point is that there should have been a limitation on the total number of patients to be accepted. In fact, that has been done—but too late. It should have been done much earlier.

SENATOR MURRAY: Then the fact that such things have occurred in some countries under compulsory health systems would be no reason why a more perfect system could not be developed in our country? DR. GOLDMANN: I might put it this way: With the knowledge we have at present, looking back over sixty years of experience, we should be able to devise a system which would provide not only for the organization of payment but also for the establishment of high standards of service throughout the country.

SENATOR DONNELL: You said a little while ago, Doctor, as I understood it, that a good deal of the criticism which has been directed against the compulsory medical insurance systems in foreign countries could have been avoided if the group practice had been more extensive. Did I understand you correctly on that? DR. GOLDMANN: Yes, sir.

SENATOR DONNELL: There has, then, been quite a considerable quantity of criticism directed against the administration of these systems in other countries, has there not? DR. GOLDMANN: I would put it this way: There has been a good deal of criticism of details of procedure. There has been little criticism of the principle involved. In other words, as far as I know, none of the important professional organizations have gone on record against compulsory health insurance as such. They have continuously, and sometimes rather violently, and I believe quite correctly, pointed to certain shortcomings and wanted these shortcomings to be eliminated. They have not suggested the abolition of the system; the only exception being a few people whose writings are widely known in this country, who turned out, as was known to every expert, to be ardent Nazis. They advocated the abolition of the system, not because they had any interest in the principle, as such. They advocated the abolition because they recognized that that whole program was a bulwark of democratic forces.

SENATOR DONNELL: You regard the fact, as I understand it, Doctor, that the professional organizations abroad have not condemned the principle of compulsory health insurance as being a strong recommendation for such systems; is that right? DR. GOLDMANN: Yes, sir.

SENATOR DONNELL: In other words, the professional organizations, organizations of men of that profession, you regard as being entitled to confidence; and their attitude is to be considered as of importance; is that right? DR. GOLDMANN: Yes, sir. May I give you the latest report of the British, the so-called interim report of the planning committee of the British Medical Association, published in 1942? This is what they had to say: "The national health insurance system has stood the test of thirty years and has proved itself fundamentally sound, efficient and capable of development. It has proved a greater success than was anticipated either by its supporters or by its opponents. Today it is an integral part of the social structure." Now that means they are absolutely for this principle. At the same time, for some twenty years they have suggested a number of changes.

SENATOR DONNELL: Now, what organization was that? DR. GOLDMANN: That is the British Medical Association. They had a special commission.

SENATOR DONNELL: Now, Doctor, the point I am getting at is this: You regard the expression of opinions by medical associations in England and foreign countries as being of importance and as carryng real weight, do you not? DR. GOLDMANN: I do think so, because I believe that the official statements of the representatives of the various organizations must carry weight.

SENATOR DONNELL: Yes; well, now, Doctor, do you not think that the official statements of such an organization as the American Medical Association, consisting of over 125,000 of

our physicians in this country, is entitled to real weight in determining what should be done in this country? DR. GOLDMANN: Of course. I am in perfect agreement with you on the fact that the opinions of such an important organization must be heard, but we are obviously talking about two entirely different things, sir. Here a professional organization has made a statement on something on the basis of experience with it. Now, the American Medical Association—and I am happy to say I have very many good friends in that Association—

SENATOR DONNELL: You are a member of it, are you not, Doctor, yourself? DR. GOLDMANN: I am not. Because I am not engaged in the practice of medicine. I am a member of the Public Health Association and several others. I believe I know a good deal about it, and I think it is my duty to know about it, and I have great respect for it, but the fact remains that what the American Medical Association says is based, of course, on the evaluation of reports from others.

SENATOR DONNELL: And is it not also based, Doctor, on the experience of 125,000 physicians in this country as to what they have found in the development of medicine in this country, and as to their observations of conditions which prevailed here, which led them to have very definite conclusions; is that not true? DR. GOLDMANN: It leads them to very definite conclusions on this country. But very few of them have ever had a chance to work under a compulsory health insurance program. If I, as a person, had to judge of that, I would spend a year in a country which had a program, to see how it works. Maybe after that I would have an entirely different opinion; I do not know. But that is what I would do.

SENATOR DONNELL: Now, Doctor, I am not in any sense depreciating—I could not if I tried, nor would I try to depreciate—the value of your experience or your observations, but the point I am making is that here is the American Medical Association, consisting of the great majority of our physicians, who presumably are acquainted with local conditions in our country, who know our physicians in our country, who know our people in our country, and just as much entitled to express opinion as the British Medical Association with respect to conditions in Britain, so it would seem to me that we are entitled to look at least in part to the American Medical Association in this country for their opinions, based on their knowledge of conditions and tendencies and professional achievements in our own country. Do you not agree with that?

DR. GOLDMANN: Senator, I have read a number of statements appearing in journals of state medical societies, and I am very sorry to say they were full of errors. That is my point. I think what is important to emphasize is the fact that the vast majority of the doctors of this country are not familiar with these details and cannot be expected to be. Because, after all, this is a specialty. This is as much a specialty as, shall we say, surgery or psychiatry. You could not expect a psychiatrist to perform an operation. You could not expect a surgeon to be able to take care of cases of eye diseases in general. How then do you expect the average doctor to know about the economic aspects that revolve about all these very intricate problems? That takes years of study.

SENATOR DONNELL: Now, Doctor, even if it be true that the doctors in this country in large part are not as closely in touch with all the details of the administration of compulsory insurance in New Zealand and Germany and Great Britain as some of you gentlemen who have studied it are, I would undertake to suggest—and I believe you will agree with me—that the doctors in this country are at least familiar with the sentiments that prevail in this country, the traditions of our country, the habits of our people, the professional efficiency of the doctors in this country, and their opinions as to how this kind of a thing would work in this country are entitled to at least some respectful consideration. That is true, is it not? You agree to that, do you not?

DR. GOLDMANN: Certainly.

(Senator Donnell requested Dr. Goldmann to supply names of authorities who had written on the subject.)

(Senator Donnell questioned Dr. Goldmann relative to various foreign systems.)

SENATOR DONNELL: Doctor, is it too strong a statement with respect to New Zealand, without going into all the details of it, in your judgment, for me to say that there in the last few months the system has almost collapsed? Am I correct in that or not? DR. GOLDMANN: I cannot answer the question because I have not been there, have not seen the details, and I am not prepared to make any statement without having a chance to spend at least six to eight weeks there and talk about the situation with everybody there and get all the facts.

SENATOR DONNELL: You know, as a matter of professional knowledge, that there have been many grave problems, at least, in New Zealand? DR. GOLDMANN: Yes, there were difficulties for the two reasons I mentioned before.

SENATOR DONNELL: Now, Doctor, you said that in Great Britain political expediency has brought about the inclusion of too many large administrative units. DR. GOLDMANN: That is correct.

SENATOR DONNELL: Do you not think, Doctor, that such a difficulty is easily possible to develop in our own country? DR. GOLDMANN: Of course it is possible.

SENATOR DONNELL: Now, Doctor, in regard to the number of persons that are required to administer the compulsory insurance act, you gave a figure of some one for every 2,000? DR. GOLDMANN: One full time employee for approximately 2,000 recipients of service.

SENATOR DONNELL: That is in Germany. DR. GOLDMANN: Yes.

SENATOR DONNELL: Now, I do not have the book right here at hand, I do not think, but my recollection is that we had testimony here very clearly some time back quoting from a book which said that the number of persons in Germany, number of employees, was approximately one for every 100. Do you disagree with that? DR. GOLDMANN: I completely disagree with it, because I had a chance to watch things there for twelve years and I have never had that impression. And here is the source where you can find the accurate data on this: what is called the Federal Statistical Office, in translation, which regularly published very detailed reports on all phases of sickness and other matters. They always give complete data on administrative costs, and so on. In addition, at regular intervals they have special reports on administrative personnel. That can be picked up very easily by going to these official sources.

SENATOR DONNELL: The book to which I referred was one which I do not have here, by Mr. Crownhart, which I have in my office. That is the one that makes the statement. DR. GOLDMANN: I know of Mr. Crownhart's book, and in fact I remember that very well. As I stated before, I can only repeat that it does not tally with the official statistics.

SENATOR DONNELL: Now, Doctor, going back to this question about the expediency in Great Britain that has brought about the adoption of too large a number of administrative units: just reduce down to common, ordinary language that we would use in the street and take the situation in our country. Is it not easily possible that political pressure brought from all over the country would tend to bring about, as it has in other phases of governmental activity, a constantly increasing number of employees of the bureau administering it on the theory, perhaps, that it is necessary to have more and more persons in each community, such as the medical administrative officer, who has to pass on the need for specialist and consultant services, under the terms of subdivision (d) of section 205, as an illustration? Is it not true that there is bound to be —or if we do not say "bound to be" at least apt to be—a strong pressure brought on Congress and on the Surgeon General and on the Federal Security Administrator to give more and more service, and more and more employees throughout our country?

And is that not apt to result, just as in Great Britain, through what you called expediency, and what you think of as political expediency? Is that not apt to result in an increasing number of employees in the administration of this plan all over this nation? Do you not think that is true?

DR. GOLDMANN: On the basis of available figures, I would be inclined to believe that a program such as that visualized in S. 1606 probably would require from 50,000 to 70,000 employees. That is on the basis of available experience. I do not think that is much, because after all, you cannot have a service and facilities and so on without having some administration. And I pointed out before that all the voluntary plans, of course, know that. That is why they devote a good deal of their time to administration. Now, I cannot think of anything worse than the development of a huge system of tax supported service which employs the means test. That, of course, is the alternative to such a program. Because the insurance program does not involve any means test. The alternative, or one of the alternatives, would be a program limited to the low income groups and to have tax support for that. Now, if you have that, you will need a large number of administrative persons for the

very simple purpose of checking on eligibility and determining eligibility. That is going to be an enormous problem and certainly by far greater than anything you can expect under an insurance program.

SENATOR DONNELL: Well, Doctor, regardless of whether some change in this bill might increase the number, certainly to administer this bill as it is written, in your judgment, would require from—I believe you said 60 to 70 thousand persons.

DR. GOLDMANN: I would say from 50,000 to 70,000. It depends, of course, on the total number of persons covered.

SENATOR MURRAY: Senator Wagner, who has been a student of this subject for a great many years, has pointed out that we already have a Social Security Board set up, and it is already administering a Social Security program of very broad character. He points out that with very few additions it would be adequate to administer this bill, Senate 1606, if it became a law. What have up to say to that? Are you familiar with the present setup of the Social Security Board? DR. GOLDMANN: Not enough to be able to judge on the statement. But, of course, some of this personnel may well be utilized for certain aspects. Of course, you still will need some additional personnel, but that is a relatively small number, as I pointed out.

SENATOR MURRAY: But we already have a system of unemployment compensation, for instance, where all of the workers of the country are included; and then we have also the old age benefits, and so forth. DR. GOLDMANN: Yes, sir.

SENATOR MURRAY: So that many of the employees already operating under the present Social Security Administration could take on some additional duties. DR. GOLDMANN: There is no doubt about that. That should be possible.

SENATOR DONNELL: Doctor, they are administering cash benefits today rather than wholesale medical and surgical and dental and nursing services, are they not? DR. GOLDMANN: Who?

SENATOR DONNELL: The Social Security organization. DR. GOLDMANN: You mean here in this country? The Social Security Board here in this country?

SENATOR DONNELL: Yes, the Social Security Board here in this country, the employees that the chairman is speaking of, are handling dollars and making the collection of funds and the disbursement of moneys. That is what they are doing in the main, is it not? DR. GOLDMANN: No, sir; they do both.

SENATOR DONNELL: But so far as any wide distribution of services, individual services, to people, is concerned, certainly this bill, S. 1606, which would include doctors' services, medical services, hospital services, dental services, nursing services, to 107 to 112 million people, would include a vast number of functions that are not today being administered by the Social Security board. That is correct, is it not? DR. GOLDMANN: It would imply—

SENATOR DONNELL: I say that is correct, is it not, Doctor? DR. GOLDMANN: Yes.

SENATOR DONNELL: Yes, certainly. Now, I want to go back to Dr. Ochsner's testimony here. You have never met the doctor? DR. GOLDMANN: I do not remember him right now. It may be. I know several thousand people, you know. If I see his face I might say "Oh, yes, I know him."

SENATOR DONNELL: Could I ask you, before you forget it: you say that you are not a practicing physician? DR. GOLDMANN: Right now I am not in practice.

SENATOR DONNELL: You have practiced, have you not? DR. GOLDMANN: Yes, sir, of course.

SENATOR DONNELL: You are a member of the Yale University faculty? DR. GOLDMANN: Right now, and for the last ten years, I have been concentrating on research, teaching and consulting service, in organization and administration of medical care programs.

(*Dr. Goldmann gave his curriculum vitae.*)

SENATOR DONNELL: Doctor, were you born in this country or born abroad? DR. GOLDMANN: No, I was born abroad. I forgot to say, of course, that I am an American citizen. I might also add that I worked for the Office of Strategic Services in 1944, if this is of interest to you.

SENATOR DONNELL: Doctor, I do not mean by this question to make the slightest implication against your loyalty. DR. GOLDMANN: No, sir, you are welcome to any information you wish to have, sir

SENATOR DONNELL: I have a very immediate reason why I am interested in knowing your background. I want to find out what experience you have had in this country, with its experience, sentiments, and so on. Now, you were born where?

SENATOR MURRAY: One at a time, please.

SENATOR DONNELL: Yes; I want him to tell everything fully. DR. GOLDMANN: I came to this country in 1937 and joined Yale University at the School of Medicine, Department of Public Health.

SENATOR DONNELL: Yes. DR. GOLDMANN: Since that time I have completely concentrated on the study of medical care programs in this country. I have made intensive studies in some twenty states, studying various types of organized programs, industrial programs, voluntary health insurance plans, public medical care plans—that means tax supported services of all types—through Blue Cross plans, a long list. On the basis of this experience, I have published a large number of papers dealing with American policies and procedures in organizing medical care. I think the number is about fifteen or twenty by now. Incidentally, I have just had in print a series of four articles on pending health legislation which take up all the bills, not just the Wagner-Murray-Dingell bill, but also the health bill and the dental bill, and so on. I have copies here for you if you want them. In other words, I have concentrated on the study of developments in this country, which I think I can do relatively easily because of my former background and experience, because I am familiar with the various factors.

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SENATOR DONNELL: Doctor, you, as I gather, are inclined to think that there is a trend toward professional control of medical affairs; is that right? DR. GOLDMANN: Yes.

SENATOR DONNELL: And you regard that as a wholesome trend? DR. GOLDMANN: I believe that is one of the most important elements in this whole picture: the professional direction and supervision of all professional men. That is the heart of the whole administrative organization.

SENATOR DONNELL: Well, then, Doctor, what do you think of a provision in this bill which subordinates the Surgeon General of the United States to the Federal Security Administrator; who, under the law, is not required to be and today is not a member of the medical profession? DR. GOLDMANN: Well, I do not think there is any need for the Federal Security Administrator being a member of the medical profession, because he has very many other things to administer. That is one thing. But the Surgeon General is the chief of this service, and that is what counts. In other words, it is an established principle of sound, public administration to have at the head of an administrative unit giving specialized service a specialist; which does not mean that this specialist is not responsible to some other persons appointed on a political basis. That is a perfectly sound thing; as long as the professional people have the necessary authority to do what in their professional judgment has to be done.

SENATOR MURRAY: Doctor, among other things Dr. Ochsner, criticizing this proposed legislation, says that it encourages quackery, and he says "Another serious defect of socialized medicine is that it encourages quackery. Four years after compulsory health insurance was adopted in Germany there were 1,713 lay practitioners, 'charlatans' and 'quacks' in Germany, and in 1929, the last statistics I have been able to get, there were 12,413. Germany has been called the 'happy hunting grounds' for quacks.

"There is a belief deep seated in the human mind that the thing which you can get for nothing is worth nothing. This accounts for the fact that many of the members of the krankenkassen value the services of their physicians lightly and spend huge sums in running to 'quacks' and in buying all sorts of 'patent medicines.'"

Have you any comment to make on that? DR. GOLDMANN: Yes, I will be glad to make a comment on that. And now I remember Dr. Ochsner. In Germany, as in a few other countries—namely, this country, and parts of Switzerland—there was given permission to practice to certain groups of people who did not have the medical education required. In Germany, until Hitler came into power, these people were not admitted to the insurance system at all, which was one of the most important points, of course—a highly controversial point—because these people did not like it. I pointed that out before. They were barred from it on the very ground that they would not be qualified to render service. They were not allowed to have any degree or anything resembling any medical degree.

In other words, they could not designate themselves as, shall we say, "Doctor of Naturopathy" or something. That was not allowed. In other words, there was a clear distinction made between nonmedical people, who were allowed to do a few minor things but were not allowed to do anything in the way of practicing medicine or anything even resembling practicing medicine and were strictly supervised; in fact, so strictly supervised, that their activity amounted to practically nothing. Now, we have parallels in other countries also.

My considered opinion is this: If S. 1606 fails to limit the service, limit participation in the service, to those with the highest qualification, meeting the highest standards, then I would say "Do not touch it any more." The moment you want to open the door to people other than the medical, dental, nursing and kindred professions, the moment you consider anything like that, I would say "Stop." I would say "There is no use." Because that certainly is going to deteriorate the quality of medical care.

SENATOR DONNELL: You are familiar with the position of the American Medical Association on this matter of compulsory health insurance? DR. GOLDMANN: Oh, yes, sir; absolutely.

SENATOR DONNELL: You know it is opposed to it? DR. GOLDMANN: I know it, and I would like to add that I always see to it that these facts are known to everybody. Because I do not want anybody to get just one side of the picture. I want to add that I just had a conference with the trustee of the American Medical Society, inviting him to speak before students, just on the grounds that I do not want to give them only one side, even though I could. I prefer to have the other side given by a representative of that organization. That indicates, I hope, that I do everything I can to try to bring the viewpoint of the American Medical Association to the knowledge of the people, leaving it to them what opinions they are going to form. That is their business. But they have got to get the facts.

SENATOR MURRAY: Doctor, are you familiar with the National Physicians Committee, which is associated with the American Medical Association? DR. GOLDMANN: Yes, sir, I seem to be on their mailing list because I get all their pamphlets and releases all the time, and I have a huge collection of their literature.

SENATOR MURRAY: Do you think that the literature which they have distributed in the country is misleading and does not contribute to a proper understanding of the questions that are involved in this situation? DR. GOLDMANN: The information is definitely misleading and confusing.

SENATOR MURRAY: And if that goes to all of the medical profession in the country it confuses them, does it not? DR. GOLDMANN: It does.

SENATOR MURRAY: Of course, we have 125,000 physicians in the country, and as a general rule those men are very actively engaged in their profession, in the practice of their profession, and they do not usually have the time to sit down and study out these problems completely, and they depend on literature that they get from sources on which they can depend. DR. GOLDMANN: Yes, sir.

SENATOR MURRAY: And this kind of literature would be entirely confusing to them, would it not? DR. GOLDMANN: It certainly would.

SENATOR DONNELL: The House of Delegates of the American Medical Association is composed of representatives throughout the country of the physicians and surgeons, is it not, Doctor? DR. GOLDMANN: Oh, yes. The House of Delegates represents the state medical societies, of course.

SENATOR DONNELL: And you know, as a matter of general knowledge, that they have given what they think is thoughtful and careful attention to this proposed legislation. You know that, do you not? DR. GOLDMANN: I know that, and I just want to point out that there is a very marked difference between the statement by the American Medical Association and the releases by this committee. That gives you the whole story. Because I have been told by very many of the outstanding members of the American Medical Association that they are a little bit disturbed by the direction of these releases; and the effects of these releases; of an organization which the American Medical Association itself, a few years ago, praised.

SENATOR DONNELL: The American Medical Association House of Delegates, however, has expressed very strongly and clearly its opposition to compulsory health insurance, has it not? DR. GOLDMANN: Very clearly and definitely and unqualifiedly, it has come out against compulsory health insurance; yes, sir.

Statement of Joseph S. Wall, M.D., on Behalf of the American Academy of Pediatrics

DR. WALL: I am Joseph S. Wall, M.D., A.M., D.Sc., a physician in the private practice of medicine in the District of Columbia for forty-nine years, the last forty years specializing in pediatrics; formerly a member of the Board of Medical Examiners of the District of Columbia, professor of pediatrics, School of Medicine of Georgetown University until retiring in October 1945; for seven years medical director of the Child Welfare Society of Washington and of its eight child health centers, until the latter were taken over by the department of health at the solicitation of the society; president from Nov. 10, 1944 until Jan. 17, 1946 of the American Academy of Pediatrics and at present chairman of its Committee on Legislation; sometime member of the board of directors of the American Association for the Study and Prevention of Infant Mortality and of the American Child Health Association; member of the medical advisory board of the Children's Bureau, U. S. Department of Labor; member of the board of editors of the *Archives of Pediatrics*, the District of Columbia Medical Society's *Annals* and of the *Clinical Proceedings of the Children's Hospital*; consulting pediatrician to the Columbia Hospital for Women, the Doctors Hospital and the Christ Child Convalescent Home; for fifty years, the coming October 1st, a member of the staff of the Children's Hospital of Washington and at the present time chairman of its medical staff of 165 members. The objections of the Academy of Pediatrics to the enactment of S. 1606 are based on the general principles that such would be deleterious to the interests of the children of the country, aside from its harmful effects on the science of pediatrics and the education of pediatricians.

(*Dr. Wall described the American Academy of Pediatrics in detail.*)

The Academy approves of the objectives of title I, part A, relating to grants to states for public health services but feels that greater effort should be made in health legislation to care for general measures of sanitation relating to factors bearing on health such as water supply, food and milk supply, sewage disposal and the like. Nor can the Academy approve of the actual prohibitions contained in the national health act as outlined on page 13, lines 12 to 17 inclusive, to wit:

The term does not include construction of hospitals, water supplies, sewerage or other waste disposal systems, or of other facilities; operation or maintenance of hospitals (except hospitals for persons afflicted with infectious diseases), water supplies, sewerage or other waste disposal systems and related matters.

Title I, part B, is in reality an abbreviated version of S. 1318 (the Pepper bill) dealing with grants-in-aid to states for maternal and child health services, including the care of crippled children, although much of the detail of S. 1318 has been omitted.

The Academy sees no necessity for and objects to the blanket coverage for "all mothers and children in the state or locality who elect to participate in the program" (p. 16, lines 2, 3 and 4).

Present organic law, the Social Security Act, as amended, provides for support from the federal government to states, "especially in rural areas and in areas suffering from economic distress," under title V, parts 1, 2 and 3, covering practically the identical needs of children now set forth in title I, part B, of the National Health Act of 1946, the coverage being limited because of the specification of funds to be allotted for these purposes.

The Academy has always urged that the Congress grant adequate appropriations to carry out such programs for maternal and child health and crippled children's services for needy persons. Representations have recently been made on the part of the Academy to the Ways and Means Committee of the House to remove the financial restrictions now specified under title V of the Social Security Act in order that more adequate funds shall be made available to the Children's Bureau to extend provisions of its present programs.

The absence of a "means test" with the opening of the doors in title I, part B, to "all mothers and children in the state or locality who elect to participate in the program" (p. 16, line 8), together with the provisions of title II, sec. 201 (a), that "every individual, who is currently insured, and has been determined by the board to be eligible for benefits under this title in a current benefit year, shall be entitled to receive personal health benefits," constitute serious objections, in the opinion of the Academy, to the adoption of such legislation.

An act conceived to provide adequate medical care for those in low economic groups which actually discriminates against these individuals by diminishing funds available for their medical care due to the inclusion of all persons, regardless of income or financial status, is certainly of questionable justice or equity.

We object to the provisions of title I, part B, and of title II because of the omission of an adequate and equitable means test in determining eligibility for benefits under the program. On the other hand, the Academy of Pediatrics favors the expenditure of federal and state monies for the benefit of those in need and unable to provide proper medical care from their own resources.

Strange as it may seem, the proposed national health act does incorporate in its paragraphs several means tests, one of which is implied and others directly named, one of the latter having application to both "the quick and the dead."

The first means test of sorts is that which specifies a ceiling to taxable wages up to $3,600 a year, although not mentioning a floor, but which thereby excludes all but the wage earner (or self insured, p. 76, lines 14, 15 and 16) from personal health benefits under this section. This exclusion from personal health benefits of persons who have no "means," who are, furthermore, the very individuals whose need the act is intended to relieve from a humanitarian standpoint, is supposed to be rectified by section 209 (a) of title II, which reads as follows:

> Notwithstanding any other provision of this title, any or all benefits provided under this title to individuals entitled to such benefits may be furnished to other individuals for any period for which equitable reimbursements to the account on behalf of such other individuals have been made or for which reasonable assurance of such reimbursements has been given by public agencies of the United States, the several states, or any of them or of their political subdivisions, such reimbursements to be made in accordance with agreements and working arrangements negotiated by the Surgeon General with such public agencies and in accordance with contracts into which the Surgeon General may enter. Services furnished as benefits to such other individuals shall, as far as may be practical in each area, be of the same quality, be furnished by the same methods and be paid for through the same arrangements as services furnished to individuals entitled to benefits under this title.

The confusion of such compensatory provisions and the extreme probability that they will ultimately be utterly unenforceable by reason of the complicity and obvious entanglements inherent in the scheme may readily be appreciated and may well strike terror to the hearts of state health administrators who are not without some unhappy experiences in the administration of sundry other federal state legislative acts.

A second means test appears under the caption Medical Care for Needy Persons on page 28, beginning with line 4, to wit: (8) "provide that the state agency shall, in determining need for medical care, take into consideration (a) the requirements of individuals claiming medical care under the plan, and (b) any income and resources of an individual claiming medical care under the plan, which must be taken into consideration with regard to an individual claiming assistance under a state plan approved under the Social Security Act, as amended."

The following section, 133 (b) (2), also concerns itself with the financial testing of needy persons with a closing paragraph relating to a means test for the dead, to wit: "Provided, That any part of the amount recovered from the estate of a deceased recipient which is not in excess of the amount expended by the state or any political subdivision thereof for the funeral expenses of the deceased shall not be considered as a basis for reduction under clause (b) of this paragraph."

I should like to interpolate at this point an item in the proposed act relating to a "means test" which I have not included in the body of this statement as it relates to the practice of dentistry, nursing and other benefits and not solely to the practice of medicine.

Section 211 (a), page 60, beginning on line 9:

> The Surgeon General and the Social Security Board jointly shall have the duty of studying and making recommendations as to the most effective methods of providing dental, nursing and other needed benefits not already provided or not currently furnished under this title, and as to expected costs for such needed benefits *and the desirable division of the costs* between (1) the financial resources of the Account or other public funds, and (2) *payments to be required of beneficiaries receiving such benefits*, and shall make reports, with recommendations as to legislation, on such benefits from time to time but not later than two years after the effective date of this title.

Thus it will be seen that certain means tests are found in the proposed act but, afar from the usually acknowledged purpose of such eligibility requirements, are to be applied to the lowest stratum of society, the poor, the needy and the unemployed, while the individual to whom a means test should in all equity and justice be applied is utterly excluded from such an examination. Not only that, but the bill welcomes him with open arms to its health benefits, whether he be a bank president, a moving picture magnate or other "malefactor of great wealth." The invitation is extended in line 13, page 77, which states that "the term 'employee' also includes an officer of a corporation."

In the light of these paradoxical provisions of the proposed act, the prophetic words of Saint Matthew become crystal clear as recorded in the twenty-fifth chapter, twenty-ninth verse, of the Parable of the Talents, where is written "For unto every one that hath shall be given, and he shall have abundance; but from him that hath not shall be taken away even that which he hath."

. . . . . .

Testimony before this committee by witnesses fully informed as to the facts demonstrates beyond all doubt that the treatment of patients under governmental systems now in existence abroad is neither prompt nor efficient. If the adjective "prompt" is used to denote swiftness and dispatch, observations of the workings of the panel system in the average English "surgery" would fully bear out the designation of "prompt," all of which is not consonant with the designation of "efficient" but denotes an opposite relationship.

The promotion of "personal relationships between physician and patient," named in this section of the bill, implies the frank admission that the proposed act will destroy those sacred obligations which now pertain to this confidential accord. The numerous detailed reports incident to administrative technics, subject to the inquisitive scrutiny of hundreds of government employees, would alone jeopardize confidential relationships between physician and patient, to say nothing of the impossibility of preserving such a relationship in the fast moving whirl of mass practice of medicine associated with assembly line methods of procedure.

In regard to the effect of the proposed act on medical education, we would refer to the excellent summary submitted to this committee on April 17, 1946 by Dr. Victor Johnson, Secretary of the Council on Medical Education and Hospitals of the American Medical Association, in which he has outlined the historical development of medical education in the nation to its present high level, solely through private initiative and the force of public opinion.

In contrast to this continuous trend toward higher standards and greater opportunities for the education of undergraduate and graduate physicians, Dr. Wilburt Davison, dean of Duke University Medical School, reports the following observations concerning his study of medical education in Germany, which has witnessed, under socialized medicine, the decline and fall of medical teaching with total destruction of the high standing once the enviable position of German medicine and formerly acknowledged throughout the world. This study was made at the behest of the U. S. Army (*Tr. A. Am. M. Colleges* **21**, May 1946). Dr. Davison reports as follows:

> The German medical schools, which were good in 1912, have not kept pace with the advances in medicine. Except for an occasional specialist who has become famous, the German graduates, even those who took postgraduate work as assistants, are not equal to the average American senior medical student. The reasons are lectures without adequate laboratory and clinical work, too many students with little or no selection (of the 6,000 total university students at prewar Munich, 4,000 were medical), inadequate facilities and faculties which are too small, the members of which do not know modern non-German medicine, whose salaries depend on the number of their students so that they are tempted to encourage an increased enrolment, who also examine their own students and thus may lower standards, and who have too much private practice. Furthermore, the segregation of research workers from the medical schools into Kaiser Wilhelm institutes has reduced the productiveness of German medicine so that the medical journals for a generation have been of little scientific value. As a result, although accurate figures are not available, German physicians, in addition to being poorly trained, are too numerous. Unfortunately most of the Germans do not realize that improvement, reorganization, limitation and supervision of medical education is necessary.

Munich is a word made infamous throughout the civilized world as expressive of weakness, intrigue and failure. It may now assume the honor of representing the German center of diploma mills to supply the "panel doctors" needed in their system of socialized medicine, although they possess only the qualifications of the average fourth year American medical student.

As to the status of graduate physicians in England, the secretary of the British Medical Association, several years after the institution of state medicine in that country, admitted that the Ministry of Health had to form classes to educate physicians through postgraduate courses because of their lack of knowledge in the care of children (personal interview with the writer).

The Academy of Pediatrics would ask the framers of the bill what constitutes a "practitioner" as the term occurs in the pages of the proposed act?

If the health and lives of young infants and children, who are entirely bereft of the ability to exercise judgment in the choice of a physician, will be entrusted to the tender mercies of cultists, pseudophysicians and various ill trained camp followers of the profession of healing, what of the evil results on the health and lives of the young of our country?

. . . . . .

If the national health act proposes to entrust the health and very lives of the citizens of the nation, more especially of its children, in which we are particularly interested, only to legally qualified physicians holding the degree of doctor of medicine, such a concrete definition should appear under the heading of "definitions" and should apply in retrospect to the several designations of "practitioners" throughout the body of the bill.

Perhaps the bill was drawn to include various cultists and so-called practitioners of the healing arts who attempt to cling to the skirts of medicine but in reality form but a fringe of impostors possessing no medical learning but endowed with an abundance of egotistical guile and deceit. The members of the profession of medicine we represent are entitled to know the answers to these queries concerning their possible bed fellows in event of the adoption of this legislation.

The Academy of Pediatrics objects to a single individual being given the overall medical care of 130 millions of Americans, with a segment of some 40 million children transferred to the Children's Bureau as physician in chief. It is not unthinkable that the executives of these two governmental bureaus who are its present distinguished and able incumbents might, through changing political fortunes, be replaced by others whose ability to administer successfully affairs of health of such magnitude would be questionable.

In conclusion, I would call your attention to the following resolutions adopted by the Academy of Pediatrics on Jan. 17, 1946:

The American Academy of Pediatrics in annual session at Detroit, Jan. 15-18, 1946, after careful consideration of proposed legislation in Congress as it relates to child health services, reaffirms its resolution as adopted at its 1939 session, namely:

"That the American Academy of Pediatrics, regarding the provisions for maternal and child welfare (referring to the national health act of 1939) favors the use of public funds to provide such services to those groups of the population unable to pay for medical services to the end that the standards of medical care may be maintained at a high level among such groups."

The Academy of Pediatrics does not favor the use of federal funds for those able to provide good medical care from their own resources.

The Academy directs the attention of those considering proposed legislation to its fact finding study of child health services now in progress, which at its conclusion should assist in the development of sound programs at state levels based on demonstrated needs.

Pending the completion of this study, it is recognized that urgent needs exist in some states that should be met in the immediate future. To this end the Academy recommends that additional federal funds be made available for grants-in-aid to the states under existing Maternal and Child Health and Crippled Children's programs of Title v of the Social Security Act, as amended.

The Academy would welcome the privilege of sending its representatives now or at any time to confer with those responsible for the preparation of legislation pertaining to child health.

(To be continued)

Coming Medical Meetings

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Hot Springs, Va., Sept. 5-7. Dr. James R. Bloss, 418 Eleventh St., Huntington 1, W. Va., Secretary.

American Congress of Physical Medicine, New York, Sept. 4-7. Dr. Richard Kovacs, 2 East 88th St., New York 28, Secretary.

American Roentgen Ray Society, Cincinnati, Sept. 17-20. Dr. H. Dabney Kerr, University Hospital, Iowa City, Iowa, Secretary.

Colorado State Medical Society, Estes Park, Sept. 11-14. Mr. Harvey T. Sethman, 1612 Tremont Place, Denver 2, Executive Secretary.

Michigan State Medical Society, Detroit, Sept. 25-27. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Mississippi Valley Medical Society, St. Louis, Sept. 25-27. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

National Medical Association, Louisville, Ky., Aug. 20-23. Dr. John T. Givens, 1108 Church St., Norfolk 10, Va., Secretary.

Oregon State Medical Society, Gearhart, Sept. 26-28. Dr. Thomas S. Saunders, 1020 S.W. Taylor St., Portland 5, Secretary.

Utah State Medical Association, Salt Lake City, Aug. 29-31. Dr. D. G. Edmunds, 610 McIntyre Bldg., Salt Lake City, Secretary.

Washington State Medical Association, Spokane, Aug. 19-21. Dr. A. J. Bowles, 218 Cobb Bldg., Seattle, Secretary.

Medical Legislation

MEDICAL BILLS IN CONGRESS

Maternal and Child Welfare

The House Committee on Labor has reported, with an amendment, H. R. 3922, proposing to enact the "Maternal and Child Welfare Act of 1946." Title I of the bill would authorize an appropriation of $50,000,000 for the fiscal year ending 1947, $75,000,000 for the next fiscal year, and thereafter such annual appropriations as needed; to assist the states in the development of comprehensive programs for health and medical and dental care for mothers during the maternity period and for children up to the age of 18. Title II would authorize an appropriation of $25,000,000 for the fiscal year ending 1947, $40,000,000 for the next fiscal year, and thereafter such annual appropriations as needed to assist the states in providing and maintaining services for crippled children. Title III would authorize appropriations of $20,000,000 for the fiscal year ending in 1947 and thereafter annually as needed, to assist state public welfare agencies in rendering care and service to dependent, neglected or delinquent children, children without parental care or supervision and children in danger of becoming neglected or delinquent.

Army Medical Service Corps

S. 2474, introduced by Senator Thomas, Utah, and H. R. 7167, introduced by Representative May, Kentucky, propose to establish in the Medical Department of the Regular Army a Medical Service Corps to perform such services as may be prescribed by the Secretary of War.

Women's Medical Personnel Integration Act

S. 2481, introduced by Senator Thomas, Utah, and H. R. 7168, introduced by Representative May, Kentucky, propose to establish the Army Nurse Corps, the Dietitian Corps, the Physical Therapist Corps and the Occupational Therapist Corps in the Medical Department of the Regular Army and in the Officers' Reserve Corps. The law, if enacted, will be cited as the "Women's Medical Personnel Integration Act of 1946."

Hospital Construction

The House has passed the Hill-Burton hospital construction bill, S. 191, proposing federal aid in the construction of hospital facilities.

Miscellaneous

The House Committee on Naval Affairs has recommended the passage of S. 1917, a bill to enact certain provisions now included in the Naval Appropriation Act, 1946. Section 41 would authorize the President, in his discretion, to appoint by and with the advice and consent of the Senate graduates of reputable schools of osteopathy as commissioned medical officers in the Navy, in such numbers as the President should determine to be necessary to meet the needs of the naval service for officers trained and qualified in osteopathy. According to the committee report, a similar authorization has appeared in naval appropriation bills since 1942 but no graduates of schools of osteopathy have been appointed pursuant to such authority.

STATE LEGISLATION

Louisiana

Bills Enacted.—H. 4 has become Act No. 47 of the Acts of 1946. It authorizes the state department of institutions to develop and improve the Hot Wells property owned by the state in Rapides Parish and maintain, operate and administer it so that the curative water may be made available to indigent residents of Louisiana free of charge and to the public. H. 257 has become Act No. 131 of the Acts of 1946. It provides that the director of experiment stations of Louisiana State University and Agricultural and Mechanical College be recognized as the state chemist, with all the rights conferred and the duties and obligations imposed on that office. H. 272 has become Act No. 303 of the Acts of 1946. It results in the enactment of a mental health act to provide for the discovery and treatment of mental disorders. H. 734 has become Act No. 414 of the Acts of 1946. It provides for the construction of a charity hospital for the proper care of the chronic and acutely ill.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

Physician Creates Fellowship.—The Marjorie Dee and Gilbert E. Fisher Fellowship in otolaryngology and bronchoscopy has been established at the Medical College of Alabama by Dr. Gilbert E. Fisher, professor and chief of the department of otorhinolaryngology, in honor of his wife Marjorie Dee. The first recipient, beginning July 1, is Dr. Frank Sims Moody, Tuscaloosa, who graduated at Harvard Medical School, Boston, in 1940 and who entered military service at the conclusion of a two year surgical internship at Kings County Hospital, New York.

Neuropsychiatric Institute and Walter Haynes Foundation Created.—A Neuropsychiatric Institute has been created at the Medical College of Alabama, Birmingham, and will be located in the school's teaching hospital, the Jefferson and Hillman, which will house on one floor the newly formed department of neurosurgery, neurology and psychiatry and all patients of the institute. Diagnostic, therapeutic, research and teaching services of the institute will be available to the profession at large. This neuropsychiatric institute has been made possible by the Walter Haynes Foundation, which will subsidize study and research in addition to the activities of the institute. The Walter Haynes Foundation, for which charter papers were filed July 8, was created by Dr. Walter Haynes, professor and chief of the newly created department of neurosurgery, neurology and psychiatry and director of the Neuropsychiatric Institute It aims to promote research, education and training in the fields of neurosurgery and neurology as well as to subsidize the institute. Trustees of the foundation are Raymond R. Paty, LL.D., president of the University of Alabama; Dr. Roy R. Kracke, dean of the Medical College of Alabama; Dr. Stuart Graves, former dean of the school of basic medical science at the University of Alabama and at present dean emeritus of the Medical College of Alabama; Dr. Haynes, and Mr. Bruce Robertson, attorney. The staff of the institute will be the same as that of the newly created department of neurosurgery, neurology and psychiatry: Dr. Haynes; Dr. Frank A. Kay, associate professor of psychiatry; Dr. Wilmot S. Littlejohn, associate professor of neurology; Donald Ramsdell, Ph.D., associate professor of psychology; Dr. James G. Galbraith, associate professor of neurosurgery; Dr. Samuel C. Little, assistant professor of neurology; Dr. William B. Patton, assistant professor of neurosurgery; Dr. Benjamin F. Morton, instructor in psychiatry; Dr. Stanley E. Graham, assistant, and Dr. William P. Tice, assistant.

CALIFORNIA

Physicians Honored.—A portrait of Dr. Charles L. Lowman, who retired as chief of staff of the Orthopaedic Hospital, Los Angeles, June 1, was unveiled June 24. The portrait is the work of Kenworthy Gardner and was a gift of the patients. Dr. Lowman has been chief since the founding of the hospital twenty-four years ago.——On June 2 the Los Angeles County Medical Association honored Dr. George Dock, Pasadena, at a reception in recognition of his twenty-three years' service on the library committee.

Postgraduate Courses.—A graduate course in internal medicine will open at the University of California Medical School, September 23, under the direction of Dr. Stacy R. Mettier, associate professor of medicine, University of California Medical School, San Francisco, and head of the postgraduate instruction for medical extension. A similar course in venereal disease will open September 13 under Dr. Mettier. Both courses will be presented by guest speakers and members of the faculty of the University of California. The internal medicine course will end December 9 and the one on venereal disease January 10.

COLORADO

Grant to Study Tick Fever.—The University of Colorado School of Medicine, Denver, has received a $2,000 grant from Lederle Laboratories, Inc., to further investigation of Colorado tick fever under the direction of Dr. Lloyd I. Florio, professor of public health and laboratory diagnosis.

CONNECTICUT

New Home of State Society—Student Members.—The Connecticut State Medical Society has taken title to property located at the corner of Edwards and St. Roman streets in New Haven, on which will be erected a headquarters building for the society. The council of the Connecticut State Medical Society has elected to student membership the following applicants:

Anna P. Conway, Wallingford, A.B., Pembroke College, 1944, Class of 1948, Woman's Medical College of Pennsylvania, Philadelphia.

Jules S. Golden, Bridgewater, A. S. T. P. Harvard University and University of New Hampshire, Class of 1948, Long Island College of Medicine.

Lois M. Deming, Cheshire, A.B., Cornell University, 1942, Class of 1947, Woman's Medical College of Pennsylvania, Philadelphia.

At a meeting Dec. 7, 1944 the house of delegates of the state society adopted an amendment to its by-laws providing that any person whose legal or family residence is in the state of Connecticut who is a regularly enrolled student and a candidate for the degree of doctor of medicine in an acceptable medical school, as provided in section 478F of the Cumulative Statutes of Connecticut, or any person who is a student in an acceptable medical school located in the state of Connecticut may become a student member of the society (THE JOURNAL, Dec. 16, 1944, p. 1039).

ILLINOIS

Chicago

Society News.—Dr. Warren W. Furey was recently named president-elect of the Chicago Medical Society and Dr. Malcolm T. MacEachern was installed as president. Other officers are Dr. Willard O. Thompson, secretary, and Dr. Edward W. White, treasurer.

Herman Smith Resigns as Hospital Director.—Dr. Herman Smith, director of the Michael Reese Hospital since 1920, has resigned, effective on the selection and appointment of a successor. Dr. Smith, who will continue to live in Chicago, will devote his full time to his private practice as a consultant to hospital boards and architects in hospital planning and building, and also as a consultant to hospital boards in hospital administration.

Transfer of Mental Service.—The Illinois Society for Mental Hygiene announced that beginning July 1 all inquiries regarding individual problems and the use of psychiatric facilities and resources in such cases would be handled in the offices of the Community Referral Service. The Illinois Society for Mental Hygiene will continue to serve as a clearing house on subjects relating to mental hygiene and to comply with requests for specialized information to individuals and groups with particular interests or responsibilities in this field. The mental hygiene society is located at 343 South Dearborn Street and the referral service at 105 West Adams Street, room 230.

New Dean at Loyola.—Dr. James J. Smith, who was recently released from the army, has been appointed dean of Loyola University School of Medicine, effective August 1. Dr. Smith graduated at St. Louis University School of Medicine in 1937. Dr. Smith served for a year as an assistant in pathology at Cook County Hospital. He was an assistant instructor in the department of clinical pathology at the University of Illinois College of Medicine and also did research and teaching at Northwestern University Medical School before entering the army in 1941. While in the army Dr. Smith spent most of his time in the field of physiology. As head of that department with the Eighth Air Force, he worked on field research in aviation and physiology, dealing with problems of anoxia and oxygen equipment, cold, high altitude, frostbite and fatigue.

Betatron Planned for Michael Reese Hospital.—A 35 million electron volt betatron, a machine invented for study of atomic power, will be constructed this fall for use in cancer research at Michael Reese Hospital. The Chicago *Sun* in reporting an interview with Dr. Erich M. Uhlmann, director of the tumor clinic at the hospital, reported July 19 that new vistas in the war on cancer opened as a result of betatron experiments at the University of Illinois. With the recent disclosure that a free beam of electrons had been successfully released three weeks ago from the 22 million electron volt betatron at the university, possibilities were foreseen, among others, of creating artificial radioactive substances and of attacking deep seated cancer. Dr. Uhlmann stated that it would take possibly five years before he would have terminated experiments on biologic objects and animals and begun using the betatron on human beings. "Liberation" of the free beam of electrons terminated nine months of work directed by Lester S. Skaggs, Ph.D., physicist of the tumor clinic at Michael Reese, who was on loan to the University of Illinois.

LOUISIANA

Vernon Lippard Named Dean at Louisiana State.—Dr. Vernon W. Lippard, associate dean of the Columbia University College of Physicians and Surgeons, New York, and associate director of the New York Postgraduate School of Medicine, has been appointed dean of the Louisiana State University School of Medicine, New Orleans, and professor of pediatrics. Dr. Lippard will assume his duties on September 15. Dr. Russell L. Holman, professor of pathology, University of North Carolina School of Medicine, Chapel Hill, has been appointed professor of pathology and head of the department of pathology and bacteriology at Louisiana State University School of Medicine. He assumed his duties on July 20. Dr. Myron E. Wegman, assistant professor of clinical pediatrics, Cornell University Medical College, New York, and director of training and research, bureau of child hygiene, New York City Department of Health, has been appointed professor of pediatrics and head of the department in Louisiana State University School of Medicine, effective September 9.

MASSACHUSETTS

Seminar on Legal Medicine.—A seminar on legal medicine will be sponsored jointly by the department of legal medicine, Harvard Medical School, Boston, and the Massachusetts Medico-Legal Society in cooperation with the medical schools of Boston University and Tufts College, Boston, October 7-12. The seminar will cover subjects of particular interest to medical examiners, coroners, pathologists and others interested in medicolegal investigations. Attendance is limited to twenty. For further information write to Dr. William H. Watters, Harvard Medical School, 25 Shattuck Street, Boston.

Personal.—Dr. Florence Gilman, Northampton, has recently resigned from the staff of Smith College, and Dr. Marion F. Booth, Northampton, has been appointed college physician to succeed her.——Dr. Roger G. Osterheld, Boston, has been appointed superintendent of the Monson State Hospital, Palmer, to succeed Dr. Morgan B. Hodskins, Palmer, who has held the position for almost twenty-five years and who has been connected with the hospital for about forty-seven years.——Dr. Elliott C. Cutler, Boston, was recently given the honorary degree of doctor of science by the University of Rochester, Rochester, N. Y.

MINNESOTA

Personal.—Dr. Orianna McDaniel, Minneapolis, retired July 1, ending fifty years' service to the Minnesota Department of Health. She joined the board first as bacteriologist at the then newly established laboratory. After subsequent promotions she was made director of the division of preventable disease in 1921, a position she has held since that time.

MISSOURI

Administrative Changes at Washington University.—Dr. Robert A. Moore, professor and head of the department of pathology, Washington University School of Medicine, St. Louis, was appointed acting dean, June 25. Philip A. Shaffer, Sc.D., resigned as dean to devote his time to work in biologic chemistry. Dr. Moore graduated at Ohio State University College of Medicine, Columbus, in 1928. Dr. Franklin E. Walton, Clayton, is assistant dean and director of the division of postgraduate studies at Washington University School of Medicine, St. Louis. Carlyle F. Jacobsen, Ph.D., resigned as professor of medical psychology and assistant dean of the medical school to become dean of the Graduate School of the University of Iowa.

MONTANA

Personal.—Dr. Francis L. McPhail, Great Falls, was elected president of the Montana Public Health Association in Helena recently.——Dr. Robert E. Mattison, formerly of Minneapolis, has been named assistant director of the division of maternal and child health, Montana State Department of Public Health, Helena.

First Director of Tuberculosis Control.—In a news item announcing the first director of tuberculosis control in Montana, THE JOURNAL, July 6, page 849, reported that Dr. Arthur R. Rikli was named to the position. The name should have been Dr. Arthur E. Rikli, who graduated at the University of Illinois College of Medicine, Chicago, in 1944. Dr. Arthur E. Rikli was confused with his father, Dr. Arthur R. Rikli, who graduated at Rush Medical College in 1907 as reported in the news item. In the same item the name of Dr. Eloise M. Larson, Great Falls, should have been Dr. E. Martin Larson, Great Falls.

NEW YORK

William Surber Dies.—William Harman Surber, a member of the Medical Department of the D. Appleton-Century Company for seventeen years and its editor since 1939, died suddenly of a heart attack on July 16, aged 55.

Alcoholism Center Opened.—William D. Plant on July 8 became executive secretary of the information center opened by the recently organized Rochester Committee for Education on Alcoholism (THE JOURNAL, May 11, p. 167). Dr. John L. Norris, Rochester, is chairman of the committee. Offices have been established in the Granite Building, Rochester, to disseminate educational material.

Faculty Changes at Buffalo.—The newspapers recently reported the following promotions at the University of Buffalo School of Medicine July 10:

Dr. Wallace B. Hamby, professor of neurology and head of the department of neurology and neurosurgery in the medical school and hospital.
Dr. Herrmann E. Bozer, clinical professor of otolaryngology and head of the department of otolaryngology in the medical school.
Dr. Gilbert M. Beck, professor of psychiatry and head of the department of psychiatry in General Hospital.
Dr. Walter L. Machemer, clinical professor of surgery.
Dr. Oscar J. Oberkircher, professor of urology and head of the department of urology in General Hospital.
Dr. Chester C. Cott, clinical professor of otolaryngology and head of the department of otolaryngology in General Hospital.
Dr. John H. Talbott, professor of medicine and head of the department of medicine at General Hospital.
Dr. Leslie A. Osborn, acting head of the department of psychiatry in the medical school.

Ophthalmic Regulations to be Enforced.—A unit has been established to administer the new state ophthalmic law requiring for the first time the licensing of persons engaged in dispensing eyeglasses, spectacles and lenses, according to the department of education in the New York *Times*, July 15. The new unit is in the department's bureau of qualifying certificates and professional examinations. The commissioner of education has appointed an advisory board to assist in administering the law, consisting of:

Dr. Walter Hipp, ophthalmologist, 140 East Fifty-Fourth Street, New York.
Harlow Fuller, optometrist, Syracuse.
Henry B. Carpenter, optician, Guild of Prescription Opticians of America, Inc., Syracuse.
Edward J. Boyes, optician, 659 Lexington Avenue, New York.
Walter A. Blocker, optician, 604 Madison Avenue, New York.

Persons engaged in ophthalmic dispensing must be licensed by July 1, 1947. Those who have been engaged in ophthalmic dispensing for three years before enactment of the law, April 10, 1946, may qualify for licenses by submitting evidence that they were thus principally engaged in the state for at least that period and evidence of good moral character. The period of filing is extended beyond July 1, 1947 for war veterans who were ophthalmic dispensers for not less than three years before they entered the armed forces. After July 1, 1947 a candidate for the required examination must present evidence of an approved secondary school course and the completion of either a one year course of study in a school of ophthalmic dispensing registered by the state education department or one year of training or experience in ophthalmic dispensing under the supervision of an ophthalmic dispenser, physician or optometrist. Thus far no schools of ophthalmic dispensing have been registered with the department, it is reported.

New York City

Henry Pratt Named to New Post at Memorial Hospital.—Dr. Henry N. Pratt has been appointed administrator of the Memorial Hospital for the Treatment of Cancer and Allied Diseases, a new position created because of the expansion program of the hospital. Dr. Pratt has been instructor in pediatrics at Harvard Medical School, Boston, since his release from army service.

New Head of Obstetrics and Gynecology.—Dr. William E. Studdiford Jr., professor of obstetrics and gynecology, Columbia University College of Physicians and Surgeons, has been appointed chairman of the department of obstetrics and gynecology at the New York University College of Medicine and visiting obstetrician and gynecologist in charge at Bellevue Hospital, it was announced July 13. He succeeds Dr. Howard C. Taylor Jr., who recently resigned (THE JOURNAL, July 6, p. 849).

Dr. de la Chapelle Named Associate Dean.—Dr. Clarence E. de la Chapelle, assistant dean and director of the postgraduate division of New York University College of Medicine, has been appointed associate dean of the college, it was announced July 22. Professor of clinical medicine at the college since 1938 and its assistant dean since 1942, Dr. de la

Chapelle last fall also became director of the postgraduate division inaugurated especially to meet the needs of medical veterans.

Grant for Study of Kidney Disease.—The Life Insurance Medical Research Fund has given a grant of $20,000 to the Long Island College of Medicine, Brooklyn, to cover two years of research by members of the college faculty who have contributed to the study of Bright's disease and the functions of the kidney. Dr. Jean R. Oliver, professor of pathology at the Long Island College of Medicine, will direct the study. Associated with him in this work will be Dr. William Dock, professor of medicine, and Dr. Robert L. Dickes, assistant director of the medical clinic at the college. The group also will study the effects of new drugs used in the treatment of infectious diseases.

Research Investigator in Aging Process.—The department of medicine of the New York Post-Graduate Medical School and Hospital has available for September 1 a research assistantship in medicine. This project is a detailed clinical investigation of the aging process in its various phases and carries a stipend to begin at $2,400 yearly in proportion to qualifications of the candidate. Requirements include graduation from an approved medical school in this country and several years of training in an approved hospital, preferably through a residency in medicine. Inquiries and applications should be addressed to the Department of Medicine, New York Post-Graduate Medical School and Hospital, 301 East 20th Street, New York 3.

PENNSYLVANIA

Supreme Court Dismisses Schireson Appeal.—On June 25 the Supreme Court of Pennsylvania affirmed the decision of the Court of Common Pleas of Dauphin County in its decision upholding the contention of attorneys for the state board of medical education and licensure that the state licensing body had the "inherent right to revoke a license obtained by fraud." The recent action is one in a long drawn out fight by Henry J. Schireson to restrain, by injunction, the state board from proceeding to a hearing on a citation to revoke his license to practice medicine. The injunction was dissolved Nov. 2, 1945 by Judge Karl E. Richards in the Court of Common Pleas of Dauphin County. The court also refused to accept Schireson's contention that the board was guilty of laches in attempting to revoke a license which had been issued some thirty years earlier. After the injunction had been dissolved the county court overruled and dismissed the exceptions filed by Schireson. The Supreme Court's decision upholds the lower court and dismisses Schireson's appeal at his own cost (THE JOURNAL, June 29, p. 769).

Philadelphia

Kenneth Goodner Named Professor of Bacteriology.—Dr. Kenneth Goodner, a member of the field staff of the International Health Division of the Rockefeller Foundation, has been appointed professor of bacteriology and immunology at Jefferson Medical College. The appointment fills the vacancy that occurred with the death of Dr. Randle C. Rosenberger, Feb. 21, 1944. Dr. Goodner received his Ph.D. at Harvard University, Cambridge. He has served as instructor of bacteriology at the University of Kansas and at Rhode Island State College, Kingston, R. I. In 1929 he was bacteriologist to the Harvard-Carnegie Yucatan Expedition, on the completion of which he was senior bacteriologist for the state of Massachusetts and instructor at the Harvard School of Public Health. In 1930 he joined the Hospital of the Rockefeller Institute for Medical Research as associate member, resigning in 1940 to affiliate with the field staff of the International Health Division.

Fels Medical Laboratory Affiliates with Temple University.—The Samuel S. Fels Funds Medical Research Laboratory and Temple University School of Medicine have affiliated for research in gastroenterology and internal medicine. Fels Research Laboratory will henceforth be known as the Fels Research Institute of the Temple University School of Medicine and will be located in the medical school laboratory building at Broad and Ontario streets. According to the agreement approved by the representatives of the agencies, the Samuel S. Fels Fund will furnish the laboratory equipment and will finance the research program covering staff salaries and the operating expenses of the institute. The management committee of the institute will consist of an equal number of members appointed by the cooperating groups. The Temple University members will include Robert L. Johnson, LL.D., president of the university; Dr. William N. Parkinson, dean of the school of medicine; Dr. Charles L. Brown, head of the department of medicine, and Dr. Robert H. Hamilton, chairman of the medical school committee on research and professor and head of the department of chemistry at Temple. The Fels members are to be designated by their board. Dr. Harry Shay, who has been in charge of the Fels Research Laboratory since its establishment in 1934, will be continued as director of the new institute. The culmination of this plan was made possible through the generosity of Samuel S. Fels, manufacturer.

SOUTH DAKOTA

Donald Slaughter Now Dean at South Dakota.—Dr. Donald H. Slaughter, who recently resigned as dean of students at the Southwestern Medical College, Dallas, has been appointed dean of the University of South Dakota School of Medical Sciences, Vermillion.

Personal.—Dr. Gordon S. Owen, Rapid City, who has recently been released from military service, has been appointed temporary acting director of the Pennington County Health Department, succeeding Dr. Irving H. Mauss, Rapid City.—— Dr. Cyrus L. Wendt, Canton, recently observed his fiftieth anniversary in the practice of medicine.

GENERAL

Institutes for Medical Record Librarians.—The first institute in a series of twenty-five planned throughout the country will open in Rochester, N. Y., September 15. The institutes were made possible through a grant of $22,000 to the American Association of Medical Record Librarians by the National Foundation for Infantile Paralysis and stems from a grant of $83,000 to be expended for scholarships to the approved schools for medical record librarians. Miss Margaret Taylor, medical record librarian, Rochester General Hospital, Rochester, N. Y., will, in the capacity of instructor, coordinate and supervise the various institutes throughout the country. The institutes will include a comprehensive discussion of maintenance and development of records.

National Medical Association.—The fifty-first convention of the National Medical Association will be held at the Central High School, Louisville, Ky., August 20-23, under the presidency of Dr. Emery I. Robinson, Los Angeles. Among the speakers will be:

Dr. Walter A. Adams, Chicago, Recent Advances in Psychosomatic Medical Research.
Charles W. Buggs, Ph.D., Detroit, Antibiotic Agents and Some General Principles of Antibiotic Therapy.
Dr. Matthew Walker, Nashville, Tenn., Experimental and Clinical Experience with Penicillin in the Treatment of Peritonitis.
Dr. Alton Ochsner, New Orleans, The Diagnosis and Treatment of Peripheral Vascular Disease.

One feature of the meeting will be a symposium on the care and treatment of infantile paralysis, the speakers being Drs. Hart E. VanRiper, New York; Irvin Abell, Louisville; Barnett Owen, Louisville, and Morton Seidenfield, Ph.D., New York. Dr. Rivers Frederick, New Orleans, will deliver the fifth oration in surgery on "Primitive Surgery and Modern Medicine," and Dr. Thomas M. Smith, Chicago, an oration in medicine on "Coronary Atherosclerosis in the Negro."

Increased Sugar Rations Not Essential.—Additional rationed sugar beyond the 15 pounds per capita annually now allocated under current rationing regulations is not essential in the treatment of disease according to an opinion rendered by the subcommittee on medical food requirements of the National Research Council, Washington, D. C. The subcommittee serves in an advisory capacity to the Office of Price Administration in its consideration of cases submitted to it by persons appealing from decisions of its field offices in applications requesting sugar in addition to the regular allotment, alleged to be necessary because of illness. The opinion of the committee is explained through the fact that unrationed sources of carbohydrate, including syrups, preserves and processed fruits and juices, are now readily available to provide a source not only of readily assimilable carbohydrate but also a wide range of palatable substances calculated to appeal to the palate of persons, sick and convalescent, whose appetites have been impaired by illness.

Pacific Science Conference.—A Pacific Science Conference convened at the National Academy of Sciences, Washington, D. C., June 6-8 to form an effective organization of American scientists interested in the Pacific, to encourage and assist scientific research and activities in the Pacific area and to further international cooperation along these lines. Scientists present at the conference represented the anthropological sciences, the earth sciences, oceanography and meteorology, the plant sciences, public health and medicine, and the zoological sciences. Emphasis was placed on the biologic and human branches of the sciences, since these are generally characterized by regional

variation. Recommendations were drawn up covering groups represented. In the division of public and medicine it was urged that cooperative studies be conducted by qualified workers in the field of medicine, together with workers in the allied sciences as follows:

1. Problems of the Pacific that have been demonstrated to be of particular importance to "nonimmune whites."
(*a*) Diseases particularly prevalent in the Pacific and of major importance: dysenteries, malaria, hepatitis, dengue complex and tropical dermatitis; also diseases of lesser but peculiar importance: scrub typhus, schistosomiasis, filariasis and Japanese B encephalitis.
(*b*) Dissemination and implantation of disease, with particular reference to quarantine procedures.
(*c*) Possible deleterious effects of the widespread use of DDT.
(*d*) Utilization of special opportunities that may arise in the study of respiratory diseases.
(*e*) Determination of factors that have led to the absence of arteriosclerosis and hypertension, which are presumed to be largely or entirely absent in certain native population groups of the Pacific.
(*f*) Nutritional problems that arise from residence in the tropics.
2. Problems that have been demonstrated to be of particular importance to native populations.
(*a*) Diseases of special importance to natives, such as tuberculosis, yaws, malaria, leprosy and helminthiases.
(*b*) Medical education for native doctors and nurses of the area.
(*c*) Feasibility of instituting modern public health procedures in certain native groups.
(*d*) Native nutrition.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the division of public health methods, U. S. Public Health Service, as follows:

Division and State	July 20, 1946	July 21, 1945	Median, 1941-45	Total to July 20, 1946	Total to July 21, 1945
New England States:					
Maine	1	3	0	4	13
New Hampshire	12	4	0	19	7
Vermont	2	2	0	9	7
Massachusetts	1	14	3	9	34
Rhode Island	0	0	0	0	1
Connecticut	4	3	0	23	25
Middle Atlantic States:					
New York	22	46	10	150	303
New Jersey	9	37	5	36	95
Pennsylvania	9	12	6	42	39
East North Central States:					
Ohio	13	8	2	73	65
Indiana	5	2	2	26	25
Illinois	42	6	7	144	38
Michigan	7	3	6	34	17
Wisconsin	4	0	0	24	9
West North Central States:					
Minnesota	97	0	0	178	9
Iowa	13	1	1	56	9
Missouri	34	4	3	83	27
North Dakota	3	0	1	7	6
South Dakota	11	0	0	19	1
Nebraska	20	1	1	39	4
Kansas	35	8	5	90	20
South Atlantic States:					
Delaware	0	2	0	1	5
Maryland	3	6	4	11	20
District of Columbia	0	9	1	2	20
Virginia	4	28	3	17	72
West Virginia	4	1	1	13	18
North Carolina	3	3	3	41	40
South Carolina	0	12	4	14	73
Georgia	4	5	5	52	43
Florida	24	2	2	362	32
East South Central States:					
Kentucky	7	3	4	36	21
Tennessee	0	20	11	23	92
Alabama	33	3	3	169	76
Mississippi	19	0	5	70	23
West South Central States:					
Arkansas	15	3	3	76	17
Louisiana	27	4	4	131	20
Oklahoma	6	9	4	70	43
Texas	61	62	9	452	419
Mountain States:					
Montana	2	0	0	32	4
Idaho	1	0	0	2	2
Wyoming	8	0	0	10	1
Colorado	43	2	0	178	11
New Mexico	12	0	1	29	5
Arizona	9	0	0	20	4
Utah	0	11	0	13	24
Nevada	0	0	0	0	0
Pacific States:					
Washington	2	4	1	65	39
Oregon	1	1	3	11	7
California	38	25	11	299	163
Total	670	369	329	3,264	2,048
29 weeks	3,264	2,048	1,955	3,264	2,048

World Health Organization.—An International Health Charter is provided in the constitution of the World Health Organization, signed July 22 by more than sixty international delegates. Dr. Fedor Grigorievitch Krotkov, recently a lieutenant general in the medical corps of the Russian army, was elected chairman of the interim commission of the new health organization after Dr. Thomas Parran, surgeon general of the U. S. Public Health Service, declined the nomination. Dr. Parran has been serving as chairman of the conference. Dr. Krotkov is deputy minister of health of the Soviet Union. A graduate of the Soviet Military Medical Academy, he is a member of the Soviet Academy of Medical Sciences and a professor of the Central Institute of Postgraduate Medical Instruction. He served as a private and sergeant in World War I and as a military surgeon in World War II, rising in 1943 to the rank of lieutenant general. His main medical interest in nutrition. The World Health Organization will either absorb or direct all existing intergovernmental health agencies, for the first time providing nations with a single, authoritative body. The new organization, to be one of the so-called specialized agencies of the United Nations, will assume the functions of the League of Nations Health Organization, of L'Office International d'Hygiène Publique and of the United Nations Relief and Rehabilitation Administration health division. It will integrate as a subordinate branch office the Pan American Sanitary Bureau. At present these four agencies are the leading, and somewhat competitive, intergovernmental health bodies. Unprecedented authority has been given to the World Health Organization, authority that is expected to enhance the prestige of the United Nations and to serve as prototype for the strong international cooperation. The health agency may make regulations in five fields of international health protection, from quarantine to drug advertising, regulations assumed to be binding on member nations unless they notify the organization to the contrary. Excepting the Hungarian, Icelandic, Swedish and Finnish delegates, who were absent from the last meeting of the constitutional session of the assembly, and excepting delegates of Afghanistan, Rumania and Yemen who did not attend the entire conference, the Health Charter was signed by representatives of all the invited fifty-one United Nations states and sixteen non-United Nations states, excluding Spain. Italy and Austria were among the signatory states participating for the first time since the war in such a conference. The only woman delegate to take part in the signing was Dr. Martha M. Eliot, vice chairman of the United States delegation. She is associate chief of the Children's Bureau of the United States Department of Labor.

Government Services

Streptomycin Available September 1

Limited commercial distribution of streptomycin after September 1 has been announced. The procedure of distribution will follow that used with penicillin. Streptomycin will be issued to selected hospitals throughout the country and they will act as depots for other areas. The amounts of streptomycin that will be distributed and the particular hospitals have not been determined as yet. Although the Civilian Production Administration reported that the June production of streptomycin, as indicated from preliminary reports, was lower than expected, it is felt that a sufficient quantity will be on hand for the inauguration of the proposed plan on September 1. May production of streptomycin was 38,750.9 Gm. Until the final arrangements, supported by production reports, have been made for the new program, civilian appeals for this drug will continue to be met only from the limited supply available under the research program of the National Rsearch Council. These appeals are judged on the basis of clinical information submitted by the physician in charge of the individual case to Dr. Chester S. Keefer, Evans Memorial Hospital, Boston. Committee members said that the sponsoring companies will continue the financial support of the Research Council's clinical research on streptomycin until September 1. The additional cost will increase to nearly $1,000,000 the grants-in-aid to the council by the streptomycin producers. Dr. Keefer said that at present there is not sufficient streptomycin available to provide for the treatment of tuberculosis and that experimental work carried on so far on tuberculosis gives increasing promise that the drug will find a definite place in the treatment of this disease. He emphasized, however, that streptomycin will supplement, not replace, the present accepted methods of treatment. Because of the limited production of streptomycin, he said, and the great quantities needed for treating this disease, its use must be restricted to research cases started before the setting up of the present program. Dr. Keefer pointed out that treatment of individual cases of tuberculosis for the minimum period of three months costs about $4,000 for the drug alone.

Deaths

Edward Godfrey Huber, Newton, Mass.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1905; born in Menominee, Wis., May 30, 1882; an honor graduate of the Army Medical School in 1908, when he was commissioned a first lieutenant in the medical corps of the U. S. Army; advanced through the various grades and rose to the temporary rank of colonel in 1919; served with the American Expeditionary Forces, commanding Base Hospital number 25 in Allerey, France, in 1918 and the Hospital Center at Perigueux, France, 1918-1919; chief of the laboratory service at the Letterman General Hospital in San Francisco from 1919 to 1923, when he became commanding officer of the First Corps Area Laboratory in Boston, serving until 1924; assistant to the Fourth Corps Area surgeon from 1925 to 1927 and medical inspector of the Second Division from 1927 to 1929; surgeon at Plattsburg Barracks, N. Y., from 1929 to 1934; assistant in vital statistics at Harvard, 1924-1925; commissioned a colonel in the medical corps of the U. S. Army in 1934 and retired in 1935; in 1935-1936 instructor in epidemiology at the Harvard University School of Public Health, where he was later an instructor in preventive medicine and hygiene, associate in public health administration, assistant professor of public health administration, associate professor of public health practice, assistant dean and acting dean from which position he retired in June to become associate dean and to retain his teaching affairs; since 1936 assistant director of the division of administration for the Massachusetts Department of Public Health; director of the medical division, region number 5, Massachusetts Committee on Public Safety; in 1927 awarded the Wellcome prize and gold medal for essay in national competition; fellow of the American Association for the Advancement of Science, American Academy of Arts and Sciences, American Public Health Association and the American College of Physicians; member of the American Medical Association, American Society of Public Administration, Association of Military Surgeons of the United States, American Society of Tropical Medicine, Boston Orthopedic Club, Newton Medical Club and the New York Academy of Sciences; in 1925 awarded the degree of doctor of public health by Harvard University; died July 23, aged 64.

Murray Burnes Gordon ✠ Brooklyn; Long Island College Hospital, Brooklyn, 1908; born in Russia, July 4, 1886; specialist certified by the American Board of Pediatrics, Inc.; professor of clinical pediatrics at his alma mater and clinical professor of pediatrics at the New York Polyclinic Medical School and Hospital; member of the American Academy of Pediatrics; fellow of the American College of Physicians; past president of the Brooklyn Pediatric Society; served on the staffs of the Kingston Avenue Hospital and the Israel Zion Hospital; consulting pediatrician at the Rockaway Beach (N. Y.) Hospital and the Infants' Home of Brooklyn; consultant endocrinologist, school hygiene, department of health of New York City; member, advisory council, department of hospitals of New York City; served as associate editor of *Endocrinology;* died in the Long Island College Hospital June 29, aged 59.

Thomas Sadler Roberts ✠ Minneapolis; University of Pennsylvania Department of Medicine, Philadelphia, 1885; born in Philadelphia, Feb. 16, 1858; served as professor of pediatrics, clinical professor and emeritus professor of pediatrics at the University of Minnesota Medical School; professor of ornithology and director of the museum of natural history at the University of Minnesota; fellow of the American Association for the Advancement of Science and the American Ornithologists' Union serving at one time a member of its council; past president of the Minnesota Academy of Science; corresponding member of the Biological Society of Washington; member of the Minnesota Academy of Medicine; for many years on the staff of the St. Barnabas Hospital, where he had been chief of staff; author of many books on bird life; died April 19, aged 88.

Grady Edward Clay ✠ Atlanta, Ga.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1914; professor of ophthalmology at the Emory University School of Medicine; member of the board of trustees of Emory University; specialist certified by the American Board of Ophthalmology; past president of the Fulton County Medical Society and the Emory University Alumni Association; member of the Southeastern Surgical Congress, American Academy of Ophthalmology and Otolaryngology, American Ophthalmological Society and the Association for Research in Ophthalmology; served overseas during World War I; associated with the Steiner Clinic, Grady, Crawford W. Long Memorial, Emory University, Georgia Baptist and Piedmont hospitals; died July 11, aged 56.

William Reilly, San Francisco; College of Physicians and Surgeons of San Francisco, 1918; member of the American Medical Association; past president of the San Francisco County Medical Society; during World War I served the U. S. Public Health Service with the rank of major and after that became connected with the U. S. Veterans' Bureau in San Francisco for several years, becoming regional director for the states of Washington, Oregon and California; secretary of the medical staff and chief of medicine at St. Joseph's Hospital; member of the state lunacy commission and physician for the federal and city civil service commissions; died April 27, aged 53, of carcinoma of the lung.

Edgar Fauver, Middletown, Conn.; Columbia University College of Physicians and Surgeons, New York, 1909; born in North Eaton, Ohio, May 7, 1875; member of the American Medical Association; past president of the Middlesex County Medical Association and the American Student Health Association; president of the Middlesex Hospital; contract surgeon, Student Army Training Corps, 1917; assistant professor of physical education at Columbia University in New York from 1909 to 1911, when he became director of athletics and physical education at Wesleyan University, serving in that capacity until 1937 and as college physician until his death April 3, aged 70, of coronary occlusion.

Robert Huntington Breed ✠ Wappingers Falls, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1904; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; served as town health officer; consulting surgeon, Northern Dutchess Health Service Center, Rhinebeck, Highland and Matteawan State hospitals in Beacon and the Hudson River State Hospital, Poughkeepsie; surgeon to the Knickerbocker Hospital in New York; on the staff of the Vassar Brothers Hospital, Poughkeepsie, where he died May 17, aged 66, of arteriosclerotic heart disease.

Charles Edward Caverly, New York; Columbia University College of Physicians and Surgeons, New York, 1917; member of the American Medical Association; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; assistant clinical professor of obstetrics and gynecology at his alma mater; served overseas during World War I; on the staffs of the Sloane Hospital for Women, St. Francis Hospital and the Vanderbilt Clinic; died in the Harkness Pavilion of the Columbia Presbyterian Medical Center May 22, aged 53, of carcinoma of the lung.

Frank Henry Neuffer, Atlanta, Ga.; Medical College of the State of South Carolina, Charleston, 1933; member of the American Medical Association; interned at the Roper Hospital in Charleston, S. C.; served a residency at the St. Joseph Infirmary in Atlanta and the Shurly Eye, Ear, Nose and Throat Hospital in Detroit; began active duty as a first lieutenant in the medical corps of the Army of the United States on Feb. 5, 1941; discharged as a major on June 2, 1946; died near Athens June 16, aged 38, of injuries received in an automobile accident.

Louis Maxson Allyn ✠ Mystic, Conn.; University of Pennsylvania Department of Medicine, Philadelphia, 1903; formerly member of the board of education; served as health officer; died May 31, aged 68, of arteriosclerotic heart disease.

Cauthen Clyde Ariail, Greenville, S. C.; Medical College of the State of South Carolina, Charleston, 1913; member of the American Medical Association; on the staffs of the Greenville General Hospital and St. Francis Hospital, where he died May 18, aged 55, of cerebral hemorrhage.

James Billings Atwater ✠ Westfield, Mass.; University of the City of New York Medical Department, New York, 1882; fellow of the American College of Surgeons; for many years associated with the Noble Hospital, where he was chief of staff emeritus at the time of his death May 3, aged 87, of arteriosclerosis.

Albert Deans Barnet, Guilford, Mo.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1887; died in the Groves Memorial Hospital, Fergus, Ont., Canada, May 4, aged 79, of cerebral thrombosis.

John Cullen Beard, Pine Bluff, Ark.; University of Tennessee College of Medicine, Memphis, 1923; member of the American Medical Association; served during World War I; Selective Service medical examiner for Jefferson County during World War II; died May 7, aged 50, of pulmonary tuberculosis.

Francis James Bold, Montebello, Calif.; Northwestern University Medical School, Chicago, 1902; died in Whittier April 29, aged 75, of coronary occlusion.

Grover Cleveland Bolin, Orangeburg, S. C.; University of Maryland School of Medicine, Baltimore, 1908; member of the American Medical Association; county health officer; died March 16, aged 61, of coronary thrombosis.

John W. Boss, Birmingham, Ohio; Western Reserve University Medical Department, Cleveland, 1902; member of the American Medical Association; on the staff of the Elyria (Ohio) Memorial Hospital; died May 18, aged 75, of cerebral hemorrhage.

William Wallace Bowen, Glens Falls, N. Y.; Baltimore Medical College, 1907; member of the American Medical Association and the American Society of Anesthetists, Inc.; secretary of the Glens Falls Academy of Medicine; on the staff of the Glens Falls Hospital, where he died April 26, aged 63, of coronary thrombosis.

William Allan Brown, Hagerstown, Md.; University of Pennsylvania Department of Medicine, Philadelphia, 1902; member of the American Medical Association; died March 23, aged 68, of acute cholecystitis.

Shepard H. Burroughs ✠ Ashtabula, Ohio; Western Reserve University School of Medicine, Cleveland, 1904; fellow of the American College of Surgeons; on the staff of the Ashtabula General Hospital, where he died May 17, aged 65, of mesenteric embolism.

Floyd H. Bussey ✠ New Bedford, Mass.; University of Michigan Homeopathic Medical School, Ann Arbor, 1910; died in St. Luke's Hospital May 1, aged 61, of coronary thrombosis and pulmonary embolism.

Leslie August Carlson ✠ Fort Collins, Colo.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1933; member of the Iowa State Medical Society; interned at the Colorado General Hospital in Denver and later a fellow in medicine at the Mayo Foundation in Rochester, Minn.; died May 11, aged 41, of cerebral hemorrhage.

Thomas Leslie Carter, Gatesville, N. C.; Medical College of Virginia, Richmond, 1917; member of the American Medical Association; served as vice president of the Medical Society of the State of North Carolina; at one time a medical officer in the regular U. S. Navy; for many years a member of the board of directors and first vice president of the Bank of Gates when he died in Whaleyville May 21, aged 53, in an automobile accident.

Alfred Hanson Claeboe, Waukegan, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1911; member of the active staff of the Victory Memorial Hospital and the associated staff of St. Therese's Hospital, where he died May 15, aged 68, of cardiovascular renal disease.

David Nelson Conner, Markleville, Ind.; Indiana University School of Medicine, Indianapolis, 1910; member of the American Medical Association; on the staff of St. John's Hickey Memorial Hospital, Anderson; died May 1, aged 69, of chronic nephritis.

Robert Wylie Corbitt ✠ Parkersburg, W. Va.; Baltimore Medical College, 1905; member of the Academy of Medicine of Parkersburg; on the staffs of the Camden-Clark Memorial and St. Joseph's hospitals; died April 11, aged 64, of cerebral hemorrhage.

Crete Arnett Crockett, San Francisco; the Hahnemann Medical College and Hospital, Chicago, 1896; College of Physicians and Surgeons of San Francisco, 1899; died May 18, aged 77, of chronic myocardial disease.

Robert Lewis Crockett ✠ Oneida, N. Y.; Syracuse University College of Medicine, 1897; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology; formerly mayor of Oneida; on the staff of the Oneida City Hospital; died May 27, aged 70, of coronary occlusion.

Edward Daniel Crowley ✠ Jackson, Mich.; St. Louis University School of Medicine, 1923; past president of the Jackson County Medical Society; on the staff of the Mercy Hospital; entered the medical corps of the U. S. Naval Reserve as a lieutenant commander on April 1, 1942; service terminated in August 1945; died June 19, aged 47, of coronary disease.

Thomas Edgar Davis, Mayfield, Ky.; University of Tennessee Medical Department, Nashville, 1894; died May 1, aged 78, of angina pectoris.

Robert C. Derivaux ✠ Nashville, Tenn.; Washington University School of Medicine, St. Louis, 1911; associate professor of clinical medicine at the Vanderbilt University School of Medicine; specialist certified by the American Board of Internal Medicine; for six years with the U. S. Public Health Service; major, medical reserve corps, U. S. Army, not on active duty; on the staffs of St. Thomas Hospital and the Vanderbilt University Hospital, where he died June 15, aged 58, of coronary thrombosis.

Frederick Christopher Devendorf, Herkimer, N. Y.; Long Island College Hospital, Brooklyn, 1912; served overseas during World War I; retired ship's surgeon; on the staffs of the Faxton Hospital in Utica and the Matteawan State Hospital in Beacon; died in the Herkimer Memorial Hospital May 5, aged 62, of heart disease.

Francis William Donahue, Augusta, Maine; Medical School of Maine, Portland, 1900; died May 10, aged 71, of burns received when his mattress caught fire.

William James Enders, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1891; member of the American Medical Association, National Tuberculosis Association and the American Sanatorium Association; also a graduate in pharmacy; for many years an officer in the U. S. Army; consulting physician at the Home for Consumptives, Chestnut Hill, where he had been medical superintendent for more than twenty-five years; died April 27, aged 75, of arteriosclerosis.

Robert Williams Faulk, Monroe, La.; Kentucky School of Medicine, Louisville, 1887; past president of the Quachita Parish Medical Society; member of the American Medical Association; served on the city school board and on the state board of nurses' examiners; city physician; on the staff of St. Francis' Sanitorium, where he died April 1, aged 86, of bronchopneumonia.

Fred Bion Fisk ✠ Jonesville, Mich.; Detroit Homeopathic College, 1903; health officer; member of the staff of the Hillsdale (Mich.) Community Health Center; died April 21, aged 68, of heart disease.

Francis Cates Ford, Houston, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1899; died in the Hermann Hospital April 16, aged 70, of coronary occlusion and cerebral embolism.

John B. Formichella, Bridgeport, Conn., Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1898; member of the American Medical Association; medical examiner for draft board number 5 and awarded a gold medal by the Italian Red Cross for his work in its behalf during World War I; associated with the Park City Hospital; died April 19, aged 71, of carcinoma of the stomach.

Oscar Edwin Fox ✠ Reading, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1905; fellow of the American College of Surgeons; past president of the Berks County Medical Society; on the staff of St. Joseph's Hospital; died April 24, aged 69, of cerebral hemorrhage.

Elizabeth Franklin, Memphis, Tenn.; University of Tennessee College of Medicine, Memphis, 1936; member of the Ohio State Medical Association and the American Medical Association; at one time practiced in Dayton, Ohio; from 1939 to 1942 resident at the Research and Educational Hospital in Chicago, where she died March 24, aged 32, of pulmonary tuberculosis.

Joseph George Hahn, New York; Licentiate of the Royal College of Physicians of Edinburgh, of the Royal College of Surgeons of Edinburgh and the Royal Faculty of Physicians and Surgeons of Glasgow, 1937; interned at the Beth Israel Hospital; began active duty as a first lieutenant in the medical corps, Army of the United States, in January 1941; promoted to captain; discharged in March 1946; died May 7, aged 39.

John Calhoun Leonard, Roanoke, Va. (licensed in Virginia in 1916); died April 19, aged 70.

I. Harris Levy ✠ Syracuse, N. Y.; Syracuse University College of Medicine, 1893; professor emeritus of medicine at his alma mater; specialist certified by the American Board of Internal Medicine; member of the American Gastroenterological Association; fellow of the American College of Physicians; on the staff of the Hospital of the Good Shepherd, Syracuse University; died in the Crouse-Irving Hospital, July 4, aged 77, of carcinoma of the rectum and diabetes mellitus.

John Oscar McKenney ✠ Beaver Dam, Ky.; University of Louisville Medical Department, 1905; died April 30, aged 66, of coronary thrombosis.

Clyde Thomas Nash, Bonicord, Tenn.; Memphis Hospital Medical College, 1906; died April 1, aged 64, of cardiovascular renal disease.

James A. Nelson, Chicago (licensed in Illinois in 1896); died April 19, aged 77, of cerebral hemorrhage and acute nephritis.

Carl August Ostling, Chicago; Rush Medical College, Chicago, 1904; died in the West Suburban Hospital, Oak Park, Ill., April 5, aged 78, of empyema of the gallbladder.

Arthur Ellis Pattrell ✠ Towson, Md.; Dartmouth Medical School, Hanover, N. H., 1905; member of the American Psychiatric Association; for many years first assistant physician in the Sheppard and Enoch Pratt Hospital; died in Baltimore recently, aged 66.

Thomas Peck Prout ✠ Summit, N. J.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1891; past president of the New Jersey Neuropsychiatric Association and the Union County Medical Society; member of the American Psychiatric Association, the New York Academy of Medicine and the New York Neurological Society; medical director of the Fair Oaks Sanatorium, where he died April 26, aged 78, of mesenteric thrombosis.

Clara Viola Radabaugh ✠ Battle Creek, Mich.; American Medical Missionary College, Battle Creek and Chicago, 1909; at one time on the staff of the St. Helena Sanitarium and Hospital in Sanitarium, Calif.; for many years on the staff of the Battle Creek Sanitarium; died in the Kimball Sanatorium April 13, aged 72, of tuberculosis of the lungs.

William Edmund Rochford ✠ Minneapolis; Bellevue Hospital Medical College, New York, 1889; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; for many years chief surgeon for the Milwaukee Railroad; served on the staffs of St. Barnabas Hospital and the Northwestern Hospital, where he died in April, aged 86, of cerebral hemorrhage.

Wiley Astor Rogers, Franklin, N. C.; University of Nashville (Tenn.) Medical Department, 1898; member of the American Medical Association; honorary member of the Medical Society of the State of North Carolina; served as a member of the state legislature, county coroner, county physician and president of the Bank of Franklin; died in the Angel Hospital April 27, aged 73, of cerebral hemorrhage.

George Washington Ross ✠ Port Ewen, N. Y.; Albany Medical College, 1899; since 1930 served as health officer of the town of Esopus, Ulster County; on the staff of the Kingston (N. Y.) Hospital; died in Fort Lauderdale, Fla., April 8, aged 69, of coronary thrombosis.

Moses Peter Rucker, Bedford, Va.; Maryland Medical College, Baltimore, 1904; member of the American Medical Association; past president of the Bedford County Medical Society; on the staff of the John Russell Hospital; died in Roanoke April 4, aged 69, of bronchopneumonia.

Leo Kirk Ryan ✠ Gary, Ind.; Northwestern University Medical School, Chicago, 1916; fellow of the American College of Surgeons; served during World War I; on the staffs of the Methodist Hospital and the Mercy Hospital, where he died April 25, aged 53, of coronary thrombosis and cerebral embolism.

Loren Addison Sanders, Concord, N. H.; University and Bellevue Hospital Medical College, New York, 1899; member of the American Medical Association; fellow of the American College of Surgeons; Merrimack County medical referee for many years; on the staff of the Margaret Pillsbury and Memorial hospitals; died April 24, aged 71, of carcinoma of the larynx.

Joseph Eckles Scott, Portland, Ore.; University of Oregon Medical School, Portland, 1941; served as part time instructor in the department of medicine at his alma mater; interned at the University of Oregon Medical School Hospitals and Clinics, where he served a residency; on the staff of the Good Samaritan Hospital; died in the Hahnemann Hospital April 23, aged 32, of bronchopneumonia.

William T. Scott, Martinsville, Ohio; Medical College of Ohio, Cincinnati, 1889; member of the American Medical Association; died April 28, aged 80, of valvular heart disease.

Peter Thomas Skaggs ✠ Miami, Fla.; University of Louisville (Ky.) Medical Department, 1896; an Affiliate Fellow of the American Medical Association; on the staff of the Jackson Memorial Hospital; died April 2, aged 77, of coronary heart disease.

Albert Grant Smith, Portland, Ore.; California Medical College, San Francisco, 1888; died April 7, aged 79, of chronic pyelitis and cystitis due to infection.

Harry Shelton Smythe, Mountain City, Tenn.; University of Tennessee Medical Department, Nashville, 1910; died in the Johnston Memorial Hospital, Abingdon, Va., April 17, aged 60, of injuries received in an automobile accident.

Simon B. Spilberg ✠ Milwaukee; University of Odessa Faculty of Medicine, Russia, 1915; served as medical director of the Home for Aged Jews; for many years affiliated with the Mount Sinai Hospital, where he died April 21, aged 56, of coronary thrombosis.

George W. Stoler ✠ Lancaster, Pa.; Jefferson Medical College of Philadelphia, 1920; past president of the Lancaster County Medical Society; on the staff of the Lancaster General Hospital, where he died April 12, aged 55, of spontaneous subarachnoid hemorrhage.

Daniel Melvin Stone ✠ Seattle; Northwestern Medical College, St. Joseph, 1887; University of Louisville (Ky.) Medical Department, 1898; served as county jail physician and as chief of staff of St. Luke's Hospital; died April 15, aged 81, of chronic myocarditis.

Claude Hutcheson Sullivan, National Military Home, Ohio; Emory University School of Medicine, Atlanta, 1917; served on the staffs of various Veterans Administration facilities; died in Zebulon, Ga., April 2, aged 51, of hypertension and cerebral hemorrhage.

Claude Henry Temple, Memphis, Tenn.; Lincoln (Neb.) Medical College, Eclectic, 1894; St. Louis College of Physicians and Surgeons, 1895; died April 16, aged 73, of arteriosclerotic heart disease and diabetes mellitus.

Lawrence Terry ✠ Alameda, Calif.; Northwestern University Medical School, Chicago, 1942; died March 6, aged 50, of coronary thrombosis.

Charles Rees Townsend, Centralia, Kan.; University of Louisville (Ky.) Medical Department, 1894; Jefferson Medical College of Philadelphia, 1895; member of the American Medical Association; served as mayor of Centralia and as county coroner; died in the Missouri Methodist Hospital, St. Joseph, Mo., April 4, aged 75, of bilateral pyelonephritis, and stricture of the urethra.

Charles Edgar Turner ✠ Columbus, Ohio; Starling Medical College, Columbus, 1896; fellow of the American College of Surgeons; on the staff of Mount Carmel Hospital, where he died April 22, aged 71, of heart disease.

Henry Edward Twohig ✠ Fond du Lac, Wis.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; member of the Northwestern Railway Surgeons Association; on the staff of St. Agnes Hospital; director of the National Exchange Bank, which he helped to organize; died April 10, aged 72, of coronary thrombosis.

Henry James Vogt, Pueblo, Colo.; Kentucky School of Medicine, Louisville, 1893; member of the American Medical Association; on the staff of St. Mary's Hospital, where he died April 19, aged 78, of gastric hemorrhage.

John Slater Waterman ✠ Jacksonville, Fla.; Harvard Medical School, Boston, 1901; died April 27, aged 70, of arteriosclerotic heart disease.

Joseph Nelson Wickham, Flushing, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1903; member of the American Medical Association; on the consulting staff of the Flushing Hospital, where he died April 6, aged 66, of cerebral thrombosis.

George Raymond Wright, Montrose, Mich.; Bellevue Hospital Medical College, New York, 1889; member of the American Medical Association; died in the Memorial Hospital, Owosso, April 30, aged 79, of pneumonia and heart disease.

Charles Ira Wynekoop ✠ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1898; fellow of the American College of Surgeons; chief medical examiner for draft board number 55 during World War I; founder and president of the Lake View Hospital, where he had been chief surgeon for many years; attending surgeon to the Augustana Hospital; died April 19, aged 74, of chronic myocarditis.

Harvey Ray Wynn ✠ Findlay, Ohio; University of Michigan Homeopathic Medical School, Ann Arbor, 1912; fellow of the American College of Surgeons; served during World War I; on the staff of the Findlay Hospital; died in the Sawyer Sanitarium, Marion, April 13, aged 56, of venous hemorrhage.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 29, 1946.

Medical Uses of Penicillin

At the Royal Society of Medicine Sir Alexander Fleming, the discoverer of penicillin, opened a discussion on the medical uses of the drug. Each of the two chief ways of giving penicillin—into the blood stream and by local application—had its uses. Injected into the blood stream penicillin did not get everywhere in high concentration, as, for example, into a large abscess or into an empyema. The amount should be sufficient to destroy the infecting organism. Penicillin was the only chemotherapeutic agent which was quite nonpoisonous and therefore no trouble was to be apprehended from overdosage. Much greater danger lay in underdosage. Bacteria, like other living creatures, had a power of adaptation and quickly recovered from a nonlethal dose and became resistant to penicillin.

The usual method of administration had been injections every three hours day and night, but this was being given up in favor of one or two large doses a day. If made up in a simple aqueous solution, penicillin to the amount of 100,000 units was out of the circulating blood in about six hours, but by making up in oil-wax mixtures the time in the blood could be prolonged. With the greater availability of penicillin it was now justifiable to increase the dose, at the same time lengthening the interval. Thus the ordinary treatment of 15,000 units every three hours meant 120,000 units a day, but this might be raised to 100,000 every six hours, which meant 400,000 units, or 300,000 every eight hours, which meant 900,000 units or even 500,000 units every twelve hours, which meant 1,000,000 units a day.

At the moment, said Sir Alexander, administration by inhalation was being widely used. If 100,000 units was inhaled morning and evening penicillin would be maintained in the blood almost all the time. High concentrations would be found in the sputum; 2,000 units per cubic centimeter was found twelve hours after inhalation. The method might well become more popular in the treatment of chronic bronchitis. Organisms like the pneumococcus and the streptococcus were penicillin sensitive and disappeared within two days. Even Pfeiffer's bacillus disappeared. But the place of these was liable to be taken by Friedländer's bacillus and other organisms, and in some cases the result was just as bad as before treatment. Penicillin lozenges were useful but in some instances produced an unpleasant stomatitis. Here again, while the streptococci disappeared from the mouth, their place was taken by penicillin insensitive organisms, which might be worse for some patients than the streptococci.

Prevention of Acute Poliomyelitis in Boarding Schools

The Medical Officers of Schools Association was recently asked by the headmasters' conference for a statement embodying representative opinion as to the action to be taken when acute poliomyelitis appeared in a residential school. A committee representing the Royal College of Physicians, other medical bodies, the Ministry of Health and the Medical Officers of Schools Association unanimously prepared a note to headmasters. This pointed out that in residential schools only an extremely small percentage of boys are attacked and that case to case infection is not common. In a carefully supervised school the risk of spread after recognition of the initial case or cases is not large. Some parents may wish to remove their child. No objection should be raised, but they should be informed that they assume a responsibility for isolating the child, both in transit and at home, from all young children and adolescents for at least three weeks. A boy exposed to the disease may, although well, become a carrier and spread infection by sneezing or coughing or via the bowels. Simple hygienic precautions based on this knowledge will do much to prevent spread. If after arrival home a boy develops a fever or complains of headache or stiffness or pains in the neck or back he should at once be put to bed and a doctor consulted.

The committee also drafted a new section of the Code of Rules for the Prevention of Communicable Diseases in Schools, prepared by the association. All cases should be isolated for three weeks from the febrile onset. The quarantine of exposed children of the household and of adults whose vocation brings them in contact with children, or who are food handlers, for twenty-one days from last exposure to a recognized case is laid down. Any member of the teaching or domestic staff of the school should be examined if there are any suggestive symptoms. Nose and throat operations should be postponed in the presence of an epidemic. Although organized games must continue, those of an exceptionally strenuous type should be forbidden.

SWEDEN

(From Our Regular Correspondent)

STOCKHOLM, May 9, 1946.

Free Hospital Care After 1950

According to a proposal of the government now up for passage, obligatory health insurance will go into effect in Sweden on July 1, 1950. Simultaneously all citizens will be entitled to free hospitalization for a specified time and drugs will be supplied at half price or, in the case of certain diseases, without cost. This obligatory insurance is to be complemented with a voluntary insurance for citizens under 55 years of age, which will increase the payments made to them in case of illness.

Minister of the Interior Möller, who presented the proposal and under whose administration fall matters concerning the health and welfare of Sweden, has explained that he realizes fully that an obligatory insurance will probably be a great strain on general medical and hospital care and that numerous difficulties will no doubt arise during the transition period, especially because of the free hospital care. However, most communities are now working on plans to increase or at least enlarge their hospitals and it should not be impossible by 1950 to take care of the increased number of patients. This proposition will be voted on in about a month, and it is generally believed that it will be passed as proposed.

Franco-Swedish Medical Convention

A Franco-Swedish medical convention is to be held in Stockholm at the end of May with about forty French physicians as guests. This will be the first personal contact between Swedish physicians and their French colleagues since the war. Among the French delegates on the program will be Professor René Leriche, Professor Mondor, recently elected to the French Academy, and Professor Debret, famed in France for his contribution to organizing the medical care for sick members of the Maquis movement.

Manufacture of Penicillin in Denmark

All Danish drug companies with the exception of one have joined to build a huge factory for the production of penicillin. They are to cooperate closely with the Swedish drug company Leo, which will produce penicillin for Sweden under the direction of Professor Ernst Chain.

Inadequate Neurosurgical Attention in Sweden

A sensational article written by Dr. Ragnar Frykholm in *Svenska läkartidningen*, a Swedish medical periodical, has aroused a good deal of comment. The article claims that about 30 persons die every year while waiting for admission to a neurologic clinic for neurosurgical attention. As the situation is now, there are so few accommodations for such patients

that a waiting time of a year, with its accompanying dangers, is not unusual. While at least 377 beds are needed for the adequate care of neurosurgery patients, only 82 exist in the country at the present time. Although there is an acute shortage of doctors and nurses in Sweden, this is the only branch of medicine which suffers from such an extraordinary insufficiency of hospital accommodations. There are relatively few neurosurgeons in the country, but it may be said that all of them are pleased that this unfortunate and shocking situation has come into the light and hope that steps will shortly be taken to remedy it.

THE NETHERLANDS

(From Our Regular Correspondent)

AMSTERDAM, June 2, 1946.

Portal Circulation

Dr. F. A. A. M. Mermans presented on April 11 a dissertation to the faculty of medicine of Amsterdam on the passage of portal blood from various abdominal organs separately to different hepatic lobes. Experiments in anesthetized dogs show that superior mesenteric venous blood colored with quinacrine passes mainly to the right hepatic lobe. Femoral blood using the same colorimetrically estimable substance becomes uniformly distributed over both halves of the liver. Splenic venous blood was found by a similar technic to pass mainly through the left liver lobes. From these facts it is deduced that two separate and merely partially mixed streams of blood are conducted in the main portal vein, pursuing separate vascular paths in the intrahepatic branches of the portal vein. Some mixing of the two parallel streams in the same vessel does take place indeed, as indicated by the fact that separate circulation is more evident in small dogs, whose portal vein is short, than in big ones, in which in a longer portal vein the opportunity to mix is greater. A variety of movements had no apparent effect on the separate streams. This work has a bearing on problems of human pathology. The human liver is tripartite as to portal circulation: left, including quadrate and caudate lobes, right main lobe from surface to gallbladder and right renal and adrenal impressions. It is pointed out that the majority of liver abscesses incident to amebic dysentery are localized in the right liver lobe. Secondary liver abscess incident to chronic appendicitis is also most common in the right liver, as illustrated at necropsy. Secondary tumor localizations and sequels of poison action on the liver deserve renewed consideration with a view to the double portal stream.

Typhoid Epidemic in 1945

In an inundated district near Utrecht an epidemic of typhoid raged at the close of the war, involving 400 cases that came under the care of the Utrecht clinics of internal medicine. Jordan and Hazenberg have published a report of these cases (*Nederl. tijdschr. v. Geneesk.* **90**:575, 1946). The mortality was 11 per cent, rising with age; 14.5 per cent of the patients were previously vaccinated and their mortality rate was well below the average, 3.4 per cent. However, the duration of illness was not influenced by vaccination. In less than one third of the cases relapses were observed. The incidence of rash was as low as 52 per cent. Complications were of the type and frequency generally known. However, an exception was presented by a boy aged 11 years, whose illness was not severe; he had a symmetrical gangrene of the margin of the external ear. During an epidemic of typhoid there is a tendency to diagnose the disease erroneously. In 3 cases a typhoid-like syndrome developed, while the serodiagnostic result remained negative. One of these cases was proved at necropsy to be a septic infection originating from crural skin lesions; another was found surgically to be due to a retrosternal struma in which an abscess had developed; the third misleading case was diagnosed eventually as tuberculous peritonitis. There was a tendency to similarity in severity in cases in which the disease occurred in several members of the same family.

Planning and Building

There is a shortage of 300,000 living apartments in the Netherlands as war sequelae due to destruction by action and almost complete cessation of construction during five years of occupation. If unhampered by shortage of essentials, a technical capacity to build 70,000 apartments a year is anticipated at present. Such productivity can be expected only after a few years retraining in project making and performance. After this "lag time" the official expectation is that maximal production will have to be maintained at a rather uniform level till 1970. The natural yearly increment of the population necessitates the building of 35,000 new apartments each year. An additional 14,000 apartments are needed in the same period in order to replace buildings that become uninhabitable or that must be removed to afford space for new, more timely construction. Experts in housing urge state and municipal authorities to provide planning to the building industry. A demographic investigation will provide data as to demand. A rational satisfaction of the demand for housing will have to be imposed by legislation, stimulating the most urgently wanted type of construction.

Tulip Bulbs and Penicillin

The first Netherlands air liner on the Amsterdam-New York route brought a present of 20 million units of penicillin from the New York Botanical Gardens in return for tulip bulbs that have been dispatched from this country.

Personal

The city council appointed Professor I. Boerema to the chair of surgery at Amsterdam vacated by the retirement for age of Professor W. Noordenbos.

Dr. A. B. F. A. Pondman, former deputy director of the state institute of public health, has been appointed to the chair of bacteriology, serology and immunology in Groningen University.

Dr. L. van der Horst has been appointed to the chair of psychiatry in Amsterdam University.

The death on Feb. 19, 1943 of Dr. G. W. Kastein, neurologist and author of several noteworthy publications, was commemorated recently. He was one of the prominent members of the Netherlands resistance action during German occupation. Several daring actions were undertaken under his guidance and with his participation. After a successful action against the Amsterdam civic registration office, where the registration cards of many persecuted persons were burned, he fell into the hands of the field police. He attacked the officials during the hasty trial and in the confusion he managed to jump out of a window on the second floor of the building, dying from the injuries sustained in his gallant fight.

Marriages

DANIEL P. SCHULTZ, Port Jervis, N. Y., to Miss Augusta McKeon of Shohola, Pa., in Newburgh, N. Y., April 27.

HENRY MCGILL YOUNG, New Britain, Conn., to Miss Norma Pearle Yates of Kennebunkport, Maine, June 15.

CLAIRE J. WYATT JR., Rome, Ga., to Dr. Barbara Vivian Collip of Westmount, Que., Canada, May 23.

ROBERT BRUCE SCRIBNER, Conneaut, Ohio, to Miss Margaret Louise Alsberg of Franklin, Pa., in May.

MARTIN JOSEPH SCHIRBER, Timber Lake, S. D., to Miss Rose Marie Brown of Atlantic, Iowa, June 8.

DOMINIC JOSEPH VERDA to Miss Dorothy Wilma Fuhlage, both of St. Louis, May 11.

Correspondence

AMPHETAMINE SULFATE FOR ACUTE BARBITURATE POISONING

To the Editor:—The problem of acute barbiturate poisoning is admittedly a serious one throughout the nation. The recent article by Drs. A. W. Freireich and J. W. Landsberg (THE JOURNAL June 22) entitled "Amphetamine (Benzedrine) Sulfate for Acute Barbiturate Poisoning" prompts me to offer these observations and one suggestion.

History of dosage or even of the particular barbiturate involved is notoriously unreliable, particularly in suicide attempts. The time elapsing between ingestion and admission to a hospital or observation is important but frequently impossible to determine. The degree of depression present on initial observation is difficult to assess accurately by physical examination. The majority of patients will recover spontaneously without specific antagonistic drug therapy. Those who have had a "lethal" dose, i. e. who would not recover without specific drug therapy, should if possible be capable of distinction from those who may appear to be comparably depressed but have actually received a sublethal dose. In the moderately depressed, any analeptic will appear to be efficacious and for that reason enthusiastic claims have been made for a large number of drugs.

To avoid confusion and establish a basis of comparison for the efficacy of various drugs, would it not be feasible to administer a "test dose" of 4 cc. of 10 per cent aqueous solution of metrazol (Bilhuber-Knoll commercial product of pentamethylenetetrazol) rapidly, intravenously to these patients before any other drug therapy and classify the degree of depression as follows?

Grade 1. Patients who respond to the "test dose" by moving about, opening their eyes or answering questions.

Grade 2. Patients who respond by a significant rise in blood pressure, stimulation to respiration or increase in muscle tone and reflex activity.

Grade 3. Patients who show no apparent response.

If it can be established that patients of grade 3 are resuscitated by any drug its efficacy would appear to be established.

This suggestion is offered in cognizance of the fact that no drug therapy is of importance unless the airway is kept patent, sufficient oxygen delivered into the alveoli and the various other measures designed to promote elimination of the barbiturate, sustain vital functions and prevent complications are carried out assiduously.

F. A. DUNCAN ALEXANDER, M.D., Dallas, Texas.

To the Editor:—Freireich and Landsberg, in an article in THE JOURNAL entitled "Amphetamine (Benzedrine) Sulfate for Acute Barbiturate Poisoning," present a group of 14 cases of barbiturate poisoning treated with amphetamine sulfate injected intravenously in which only one death resulted. At the Indianapolis City Hospital over a period of years a large volume of work was done on the intravenous injection of various barbiturates including all those mentioned in this communication. Our experience and that with barbiturates taken with suicidal intent indicated that death rarely ensues unless doses of 100 to 150 grains (6.5 to 9.7 Gm.) of barbital or phenobarbital is ingested by the average adult; that with amytal 90 grains (5.8 Gm.) or more did not cause death except in patients with other complications; that even with the short acting barbiturates seconal and pentobarbital adult patients ingesting less than 50 grains (3.25 Gm.) did not die when given such stimulants as caffeine and sodium benzoate and ephedrine or when simply allowed to sleep in a position that did not interfere with their respirations.

We have never seen the need for such stimulants as picrotoxin unless the dose of barbiturate was very large and seriously question the need or even the desirability of rapidly awakening patients suffering from barbiturate intoxication. Several patients who had ingested from 100 to 150 grains of phenobarbital or 100 or more grains of amytal slept as long as seven days and completely recovered after having received enormous doses of picrotoxin. In the treatment of these patients picrotoxin was given in sufficient quantity to keep the respiratory exchange and the blood pressure within normal limits without producing convulsive movements or anything more than slight muscular twitchings.

That amphetamine sulfate may be a satisfactory antidote for barbiturate poisoning is not questioned, but the cases cited do not offer evidence of its effectiveness in barbiturate poisoning. In our experience the only patient that might not have been expected to recover with ordinary treatment was the patient that died following the ingestion of 60 grains (3.9 Gm.) of sodium amytal and possibly patient 5. One might venture the suggestion that the judicious use of picrotoxin might have done as well. The amount of barbiturate taken by patients 1, 2, 3, 4, 6, 7, 10, 12 and 13 should not cause death in the average adult when not given any treatment.

GERALD F. KEMPF, M.D., Indianapolis.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, July 27, page 1094.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Part I.* Various centers, Sept. 30-Oct. 2. Final date for filing application is Sept. 1. *Part II.* Dec. 16-17. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Written.* Various centers, Sept. 30. *Oral.* Boston, Oct. 9-14. Sec., Dr. Paul M. Wood, 745 Fifth Ave., New York 22.

AMERICAN BOARD OF DERMATOLOGY & SYPHILOLOGY: *Written.* Various centers, Oct. 7. Final date for filing application is Aug. 15. *Oral.* Cleveland, Dec. 5-7. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* Chicago, Oct. 30-31. Final date for filing application is Aug. 15. Asst. Sec., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* New Haven, Oct. 8-9. Sec., Dr. P. C. Bucy, 912 S. Wood St., Chicago 12.

AMERICAN BOARD OF OBSTETRICS & GYNECOLOGY: *Written. All Groups. Part I.* Various centers, Feb. 7. Final date for filing application is Nov. 1. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh 6.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral. All Groups. Parts I and II.* New York, June 1947. Final date for filing application is Dec. 1. Chicago, October 1947. Final date for filing application is March 1. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Me.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Part II. Oral.* Chicago, January. Final date for filing application is Nov. 1. Sec., Dr. Guy A. Caldwell, 1136 W. Sixth St., Los Angeles 14.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* Chicago, Oct. 8-12. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City, Ia.

AMERICAN BOARD OF PSYCHIATRY & NEUROLOGY: New York, December. Final date for filing application is Sept. 30. Sec., Dr. Walter Freeman, 1028 Connecticut Ave. N.W., Washington, D. C.

AMERICAN BOARD OF RADIOLOGY: Chicago, Nov. 27 to Dec. 1. Final date for filing application is Sept. 1. Sec., Dr. B. R. Kirklin, Mayo Clinic, Rochester, Minn.

AMERICAN BOARD OF UROLOGY: *Oral.* Chicago, February 1947. Final date for filing application is Nov. 15. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis 4.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Shock Therapy and Res Ipsa Loquitur.—The plaintiff sued the defendant physician and the Gartly-Ramsay Hospital for damages caused by the alleged negligence of both in the administration of an electric shock treatment. No appeal was taken as to the hospital, but from a directed verdict for the defendant physician the plaintiff appealed to the Supreme Court of Tennessee.

The plaintiff's petition alleged that the defendant physician advised the administration of certain electric shock treatments for the plaintiff's nervous condition and that the plaintiff submitted to one of these treatments without injurious results. After a second treatment, however, the plaintiff, on regaining consciousness, found that he was suffering severe pain in the right hip and thigh. An x-ray picture taken two days later revealed a fractured hip. It was on the advice of his private physician that the plaintiff consulted the defendant, a specialist in nervous and mental ailments. The plaintiff knew that defendant was going to administer an electric shock treatment and knew that the purpose of the electric shock was to throw him into a convulsion. He knew such treatments to be very strenuous. While the treatment is being given the patient is lying down on a "treatment pad" with his head in a downward position. A certain amount of electric current is caused to pass through the head and body, as the result of which the patient becomes unconscious and remains so for several hours. When asked what part the nurses and "Negro porters" take in administering the treatment, the plaintiff said "They hold me." Evidently they hold the patient, owing to the fact that he is having violent convulsions. The court thought there could be no doubt but that plaintiff's hip fracture resulted from the severe and repeated convulsions due to the electric shock.

At the close of the plaintiff's evidence the defendant's counsel offered to read a stipulation as to what a Dr. Lipscomb would say concerning the nature, method and result of administering the electric shock and the treatment which he administered to secure a union of the fractured hip. This was objected to on the ground that the doctor was not qualified to testify as an expert on the method of giving the shock treatment. The stipulation showed that Dr. Lipscomb's specialty was that of an orthopedic surgeon and had been for thirty years; that during his experience he had occasion "to treat two hip fractures resulting from shock treatment, one shoulder fracture and had seen one spinal fracture but did not give treatment therefor"; that the doctor "is familiar with and has knowledge of the literature and reports of the medical profession in reference to the administration of shock treatments and has talked with various specialists who give such treatments, and that it is the witness' understanding and knowledge that fractures occur even with every precaution used to prevent them." It was admitted that Dr. Lipscomb had never seen the treatment administered and "knows nothing about the technic of his own personal knowledge." The defendant urged that, even though the physician had no personal knowledge of how the treatment is administered, he could give an opinion based on his special knowledge of the subject acquired from medical literature and other reliable sources. The plaintiff argued, however, that Dr. Lipscomb's statement "was based upon hearsay evidence . . .; that it was apparent that he had no personal knowledge of how the 'shock' treatments were administered and was not an expert in any respect with reference thereto."

When a witness is qualified to give expert testimony in a given case, said the Supreme Court, depends on the extent of his knowledge of the subject about which he testifies. Even in cases where he is allowed to do so the jury is admonished that the probative value of what he says is determined by the extent of his learning and his experience or lack of it in the field of his particular calling or profession. Furthermore, to qualify as an expert witness in a malpractice action, it must appear that the physician is familiar with the treatment, care and skill of practitioners in the locality in question. We think the qualification of this witness rested within the sound discretion of the trial judge, continued the Supreme Court. He was a man of wide experience and knowledge in the field of orthopedic surgery and was familiar with and had knowledge of the literature of the medical profession on the subject of shock treatment. The trial judge was justified in assuming that the literature referred to in the stipulation was such as the medical profession regarded as reliable authority on "shock therapy." The Supreme Court accordingly concluded that the stipulation was admissible.

The plaintiff next contended that he was entitled to rest his case on the doctrine of res ipsa loquitur on the theory that the defendant had exclusive control of the electrical device which shocked him and that the plaintiff would not have sustained the broken hip had the defendant exercised due care. The doctrine of res ipsa loquitur, said the court, does not ordinarily apply in malpractice cases. However, the cases generally hold that "res ipsa loquitur applies where, during the performance of surgical or other skilled operations, an ulterior act or omission occurs the judgment of which does not require scientific opinion to throw light upon the subject; while it would not apply in cases involving the diagnosis and scientific treatment." In other words, the rule will not apply in malpractice cases where a scientific exposition of the subject matter is essential. In the instant case, continued the court, the plaintiff introduced no evidence showing a lack of skill in administering the shock treatment, an excessive shock of electricity, or that the application was administered for an unusual length of time. There is no evidence to show that the treatment given differed in any way from that which is usual and customary by a skilful practitioner. In a situation of this kind there is manifest need of a "scientific exposition of the subject matter" for the court and jury to understand clearly the nature of the treatment as well as the usual results that follow. In order to warrant the application of the doctrine in the instant case the court would have to take judicial notice that, as a matter of common knowledge and experience, fractures of the spine and other bones do not occur as the result of "shock therapy" in the absence of negligence. This, said the Supreme Court, we cannot do. The records before us, including the statement of Dr. Lipscomb, show that accidents such as the plaintiff sustained do occur even when the treatment is properly administered. It is not material that they occur often or infrequently. If we applied the rule of res ipsa loquitur in cases of this kind the physician and surgeon would always be in fear of the result of a scientific treatment knowing that he might have to defend his professional reputation in open court. In these circumstances the words of Mr. Chief Justice Taft (while on the United States circuit court of appeals) are most appropriate: "Few would be courageous enough to practice the healing art."

Finally it is contended that the trial judge erred in not submitting to the jury the question of defendant's negligence in failing to take an x-ray picture of his fractured hip; that the plaintiff was entitled to recover damages for pain and suffering because of his injury. This argument is based on the assumption that, had an x-ray picture been made when the plaintiff first complained of pain, proper steps could have been taken to alleviate the trouble. The only evidence in the record bearing on this issue, said the court, is the testimony of Dr. Lipscomb, who stated that no harm resulted to plaintiff by the delay of two days before the x-ray picture. Moreover, it is well settled by all the authorities that a physician will not be adjudged guilty of negligence for error of judgment in making a diagnosis. As stated in a prior case, "A physician's failure to take x-ray pictures of a fractured limb does not constitute negligence under all circumstances." Accordingly, all of the contentions of the plaintiff were overruled, and the judgment in favor of the defendant physician was affirmed.—*Quinley v. Cocke, 192 S. W. (2d) 992 (Tenn., 1946).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Alabama State Medical Assn. Journal, Montgomery

15:281-308 (April) 1946

Caudal Block Anesthesia and General Practitioner. R. D. Clark.—p. 281.
Tuberculosis Survey of Prison Populations of Alabama. A. H. Russakoff. —p. 284.
Simultaneous Splenectomy and Nephrectomy: Report of Case. C. J. Donald Jr.—p. 289.
Cancer Detection Clinic in Industry: Preliminary Report. F. H. Craddock Sr. and F. H. Craddock Jr.—p. 291.
Primary Jejunal Ulcer: Report of Case. J. L. Carmichael and W. E. Doggett.—p. 295.

15:309-356 (May) 1946

Recognition, Evaluation and Management of Heart Disease in Pregnancy. L. L. Friedman and J. R. Garber.—p. 309.
Treatment of Chest Injuries. S. W. Windham.—p. 316.
Still-Chauffard Syndrome: Rheumatoid Arthritis with Systemic Manifestations. G. S. Graham Jr.—p. 323.

American Heart Journal, St. Louis

31:527-662 (May) 1946

*Electrocardiographic Changes in Pericarditis Associated with Uremia. N. M. Keith, R. D. Pruitt and A. H. Baggenstoss.—p. 527.
*Paroxysmal Ventricular Tachycardia. J. Freundlich.—p. 557.
Electrocardiographic Studies During and After Pneumococcus Pneumonia. K. J. Thomson, D. D. Rustein, D. M. Tolmach and W. H. Walker. —p. 565.
Calcification of Mitral Valve. M. H. Fertman and L. Wolff.—p. 580.
Studies on Pathogenesis of Pulmonary Edema Following Bilateral Vagotomy. F. Reichsman.—p. 590.
Peripheral Blood Flow and Rectal and Skin Temperatures in Hypertension. H. J. Stewart, W. F. Evans, Helen S. Haskell and Halla Brown.—p. 617.
Evaluation of Use of Multiple versus Single Precordial Leads, in Conjunction with Three Limb Leads, for Practical Clinical Electrocardiography. B. Manchester and C. B. Ethridge.—p. 633.

Electrocardiographic Changes in Uremic Pericarditis.—Keith and his associates report clinical, chemical, serial electrocardiographic and pathologic observations in 3 cases of severe chronic renal insufficiency in which pericarditis developed while the patients were under their care. The initial rub over the precordium was first audible thirty days, seven days and thirty-three days before death in cases 1, 2 and 3 respectively. This period of one to four and one-half weeks provided an unusual opportunity to study pericarditis during its entire course. Observations, including electrocardiograms which could be used as controls, were made in 2 cases during a previous visit of the patients to the clinic and in all 3 cases at the time of the last admission to the hospital. Acute pericarditis occurs frequently in chronic uremia. Clinical, electrocardiographic and pathologic studies indicate that uremic pericarditis is a process which undergoes exacerbations and remissions and may even heal. It is an incident in the course of advanced renal insufficiency, but not inevitably a terminal incident. Like so many of the complications of uremia, its etiology is still unknown. The greatly altered chemistry present in the uremic patient is probably an important etiologic factor.

Paroxysmal Ventricular Tachycardia.—Freundlich reports 4 unusual instances of ventricular tachycardia with recovery. One attack lasted for twenty-six days without interruption and, although associated with myocardial infarction, ended with complete recovery after oral administration of a large single dose of quinidine sulfate. Another attack, which showed bidirectional ventricular complexes due to digitalis intoxication, was treated in this manner, and recovery followed. In 2 of the 4 cases there was no evidence of organic heart disease. The advantage of oral administration of a large single dose of quinidine sulfate is emphasized.

American Journal of Physiology, Baltimore

146:161-318 (May) 1946

Pressure Volume Diagram of Thorax and Lung. H. Rahn, A. B. Otis, L. E. Chadwick and W. O. Fenn.—p. 161.
Accuracy of Indirect Determinations of Blood Pressure in Rat: Relation to Temperature of Plethysmograph and Width of Cuff. S. S. Sobin. —p. 179.
Effect on Colon of Electrical Stimulation of Forebrain Areas in Cat. E. H. Ingersoll and Louise Jones.—p. 187.
Portal Pressure Gradients Under Experimental Conditions, Including Hemorrhagic Shock. C. J. Wiggers, D. F. Opdyke and J. R. Johnson. —p. 192.
*Performance as Related to Composition of Alveolar Air. A. B. Otis, H. Rahn, M. A. Epstein and W. O. Fenn.—p. 207.
Study of Oxygen Transport in Blood of Young and Adult Domestic Ducks. H. H. Rostorfer and R. H. Rigdon.—p. 222.
Denitrogenation of Muscle and Fat Tissues of Anesthetized Cat. A. H. Whiteley and W. D. McElroy.—p. 229.
Survival of Isolated Respiratory Center in Young Rat as Influenced by Adrenalin, Ephedrine, Insulin and Glutathione and Relation to Glycemia Changes. W. A. Hiestand and J. W. Nelson.—p. 241.
Cholinesterases in Degenerating and Regenerating Peripheral Nerves. C. H. Sawyer.—p. 246.
Differentiation of Potassium from Other Agents Associated with Toxic Effects of Tourniquet Shock. E. Mylon and M. C. Winternitz.—p. 254.
Body Cooling of Rats, Rabbits and Dogs Following Immersion in Water, with a Few Observations on Man. C. R. Spealman.—p. 262.
Biologic Energy Transformations During Shock as Shown by Tissue Analyses. G. A. LePage.—p. 267.
Role of Sensory and Motor Cortical Projections in Escape and Avoidance Conditioning in Dogs. G. B. Whatmore and N. Kleitman.—p. 282.
Enterohepatic Circulation of Foreign Bile Acids: Circulation of Cholates in Hogs with Biliary Fistulae. J. L. Irvin, C. G. Johnston and E. A. Sharp.—p. 293.
Venous Pressure Changes Associated with Positive Intrapulmonary Pressures; Their Relationship to Distensibility of Lung. A. B. Otis, H. Rahn and W. O. Fenn.—p. 307.

Performance as Related to Composition of Alveolar Air.—The experiments reported by Otis and his associates constitute an attempt to relate performance to alveolar gas composition when the oxygen and the carbon dioxide tensions are varied simultaneously and when one or the other is varied singly. All experiments were conducted in a high altitude chamber. Performance (contrast discrimination test and steadiness test) and heart rates of 11 subjects were measured over a wide range of alveolar oxygen and carbon dioxide tensions. A total of 171 half-hour experiments and 85 control runs were made. The results are plotted on a grid, and regions of normal performance and of various kinds of impaired performance are indicated. A method for analyzing performance impairment into anoxic and acapnic components is described. It was found that acapnia and anoxia are additive rather than antagonistic in their effects on performance. There exists at each altitude an optimum alveolar gas composition for best performance. This optimum may be different for different types of performance. Heart rate is increased by anoxia but is not consistently affected by acapnia. Performance impairment in most persons breathing naturally at airbreathing altitudes is essentially a matter of anoxia alone.

American Journal of Public Health, New York

36:439-592 (May) 1946. **Partial Index**

Acute Respiratory Disease Among New Recruits. J. H. Dingle and others.—p. 439.
Pasteurization of Liquid Egg Products: III. Destruction of Salmonella in Liquid Whole Egg. A. R. Winter and G. F. Stewart and others. —p. 451.
Need for Public Health Program in Rheumatic Fever and Rheumatic Heart Disease. D. D. Rutstein.—p. 461.
Improvement of Nasopharyngeal Swab Method of Diagnosis in Pertussis by Use of Penicillin. W. L. Bradford, Elizabeth Day and G. P. Berry.—p. 468.
Postwar Training Problems in Public Health. G. T. Palmer.—p. 471.
Group of Paracolon Organisms Having Apparent Pathogenicity. L. A. Barnes and W. B. Cherry.—p. 481.
Implication of Proteus Mirabilis in Outbreak of Gastroenteritis. W. B. Cherry, P. L. Lentz and L. A. Barnes.—p. 484.
Tularemia: Report on 40 Cases in Alberta, Canada, 1931 to 1944. M. R. Bow and J. H. Brown.—p. 494.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

55:525-674 (May) 1946

Distribution of Radiation in Atomic Bombing of Nagasaki. J. C. Larkin. —p. 525.
Supervoltage Radiation: Review of Cases Treated During Eight Year Period (1937-1944 Inclusive). G. W. Holmes and M. D. Schulz. —p. 533.
*Management of Malignant Tumors of Testis. E. P. Pendergrass, G. W. Chamberlin, J. Selman and R. C. Horn Jr.—p. 555.
Intrapulmonary Air Pressure and Its Relation to Pulmonary Capillary Flow. W. W. Wasson.—p. 575.
Emphysematous Gastritis. H. S. Weens.—p. 588.
Diagnostic Problems in Fractures of Foot and Ankle. D. Wilner.—p. 594.
Procedures Facilitating Roentgenologic Interpretation in Induction Station. A. J. Flaxman.—p. 617.
Heat Capacities of Roentgen Ray Tubes with Particular Reference to Use for Mass Survey Work. Z. J. Atlee and C. H. Morris.—p. 621.
Analysis of Physical Factors Controlling Diagnostic Quality of Roentgen Images: Part IV. Contrast and Film Contrast Factor. R. H. Morgan. —p. 627.
Recent Visit with French Radiologists. W. M. Loehr.—p. 634.
From the Memoirs of Student in Röntgen's Laboratory in Würzburg Half a Century Ago. H. Hille.—p. 643.

Malignant Tumors of Testis.—Pendergrass and his associates report 43 cases of malignant tumors of the testis. The five year survival rate was 42 per cent. Histopathologic type, freedom from demonstrable metastases on admission and carefully planned irradiation are the principal factors affecting the prognosis. The five year survival rate in patients free from demonstrable metastases was 71 per cent. In those with metastases on admission the corresponding result was 30 per cent. Five patients with heterologous tumors had metastases on admission, and all succumbed to the disease. One patient with a homologous tumor had metastases when first seen and is alive and free from evidence of disease five years after orchiectomy. There were 4 patients who had clinically evident metastases at some time during their illness and who are alive and well five to sixteen years after their last treatment, and in 1 case there had been a supraclavicular mass. There was no difference in end results between preoperative and postoperative irradiation. Preoperative or immediate postoperative irradiation is recommended for all patients with a malignant tumor of the testis, regardless of the presence or absence of metastases.

Archives of Otolaryngology, Chicago

43:315-428 (April) 1946

*Cancer of Larynx: Five Year Results of Concentration Radiotherapy. M. Cutler.—p. 315
Wartime Laryngeal Injuries. F. L. Lederer and J. C. Howard.—p. 331.
Chronic Dacryocystitis: Its Transapertural Approach. G. D. Wolf. —p. 344.
Aerohematoma of Sinuses. R. W. Wright and H. M. E. Boyd.—p. 357.
Otitis Media: Comparative Study of Results Obtained in Therapy Before and After Introduction of Sulfonamide Compounds. H. P. House. —p. 371.
Excision of Superior Maxilla and Ethmoid Labyrinth. E. R. G. Passe. —p. 379.
Apical Petrositis: Medical and Surgical Management in Cases With and Without Complicating Meningitis. W. C. Thornell and H. L. Williams. —p. 393.
Effect of Emotions on Hydrogen Ion Concentration of Nasal Secretion in Situ, with a Comment on Terminology of Nasal Hydrogen Ion Concentration Measurement. N. D. Fabricant.—p. 402.
Healing of Fistulas of Human Labyrinth: Histopathologic Studies. F. Altmann.—p. 409.

Cancer of Larynx.—Cutler relates observations on patients with cancer of the larynx who were treated with irradiation in the Chicago Tumor Institute. The aim was to devise a technic that would permit irradiation intense enough to cure the more radioresistant forms of laryngeal cancer, i. e. those which are not cured by the generally used divided dose technic, and at the same time to avoid serious complications of irradiation. Forty-two per cent five year cures and 39 per cent three year cures were obtained in 118 unselected cases. Concentration radiotherapy has resulted in the curing of certain forms of cancer of the larynx hitherto regarded as incurable by irradiation. Curability is high when the cords are freely movable or only partly fixed by the carcinoma, but when they are completely fixed cure is less common and laryngectomy is indicated. The most important result of this research is the demonstration that a group of patients with intrinsic squamous carcinoma of the larynx too advanced for laryngofissure and requiring total laryngectomy have been cured with irradiation. Laryngectomy should be limited to intrinsic lesions with complete fixation of the cords occurring in good surgical subjects of good life expectancy.

Archives of Surgery, Chicago

52:387-512 (April) 1946

*Streptomycin in Treatment of Surgical Infections: Report of Experiences with Its Use. J. W. Hirshfeld, C. W. Buggs, M. A. Pilling, Bernice Bronstein and C. H. O'Donnell.—p. 387.
Physiologic Considerations in Care of Patients with Varicose Veins. E. Ogden and R. S. Sherman.—p. 402.
Treatment of Unusual Subdural Hydroma (External Hydrocephalus). W. E. Dandy.—p. 421.
Diagnosis of Acute Appendicitis in Presence of Diarrhea. E. L. Keyes and M. M. Cook.—p. 429.
Treatment of Fractures of Carpal Scaphoid: Report of 64 Cases. D. Sashin.—p. 445.
Penicillin Ointment—Impregnated Gauze in Local Treatment of Infections. F. E. Mohs.—p. 460.
Surgical Specimen Consisting of Partially Developed Parasitic Fetus. L. Pavón Sarrelangue and Edith L. Potter.—p. 479.
Review of Urologic Surgery. A. J. Scholl, F. Hinman, A. B. Hepler and others.—p. 487.

Streptomycin in Surgical Infections.—Hirshfeld and his collaborators employed streptomycin in the treatment of 56 patients, some of whom were chosen because they had lesions which were probably hopeless; others were treated because they had infections for which there was no satisfactory treatment; still others were included in hope that streptomycin might prove to be better than the current treatment. If bacteremia or septicemia is present, streptomycin sterilizes the blood stream promptly, provided the organisms are susceptible to its action. Streptomycin does not sterilize walled off collections of pus, even though the organisms involved are susceptible to its action. Owing to the high concentration in which streptomycin is excreted in the urine, it is valuable for the treatment of infections of the urinary tract, provided the organisms are susceptible to its action. The results in peritonitis and various types of infections of the soft tissues were disappointing. Most of these infections were caused by a mixture of bacteria. Failure can be attributed to the presence of resistant organisms, particularly nonsporulating anaerobes. Twelve patients undergoing streptomycin therapy exhibited manifestations of toxicity.

Georgia Medical Association Journal, Atlanta

35:103-138 (April) 1946

Granuloma Inguinale: Study of 200 Cases. G. G. Allison.—p. 103.
Recognition of Ureteropelvic Obstruction. D. M. Beard.—p. 107.
Bone Graft in Orthopedic Surgery. H. T. Compton.—p. 112.
Sarcoidosis: Report of Case. W. G. Elliott.—p. 115.
A Hodgepodge of Past Experiences. C. K. Sharp.—p. 117.
Malignant Lymphoma. J. Funke.—p. 120.
Important Infections in Children. C. M. Burpee.—p. 123.

35:139-154 (May) 1946

The Doctor in This New Day. C. Thompson.—p. 139.
Roentgenologic Diagnosis of Abdominal Abscesses. H. S. Weens.—p. 142.

Journal of Aviation Medicine, St. Paul

17:113-204 (April) 1946

Visual Factors in Design of Military Aircraft. E. A. Pinson and A. Chapanis.—p. 115.
Effect of Ammonium Chloride on Altitude Tolerance. A. L. Barach, M. Eckman, E. Ginsburg and others.—p. 123.
Physical Exertion in Heat: Notes on Its Physiology and Hygiene. C. L. Taylor.—p. 137.
Thermocouples and Measurement of Body Temperatures in Laboratory and in Flight. M. K. Fahnestock.—p. 146.
Selection of Men for Aeronautical Training Based on Susceptibility to Motion Sickness. A. Hemingway.—p. 153.
Effects of Hypocapnia on Performance. H. Rahn, A. B. Otis, Mary Hodge and others.—p. 164.
Method for Continuous Analysis of Alveolar Air. H. Rahn, J. Mohney, A. B. Otis and others.—p. 173.
High Altitude Training Program for Fighter Pilots. K. P. Wolfe. —p. 179.
Diseases and Defects in Aircrew Trainees; Gastrointestinal System: Genitourinary System. J. E. Leach.—p. 185.
Recent Advances in Airplane Spraying of DDT for Insect Control. W. N. Sullivan.—p. 192.

Journal of Bone and Joint Surgery, Boston

28:213-414 (April) 1946. **Partial Index**

Psychosomatic Problems in Military Orthopedic Surgery. J. V. Luck. —p. 213.
Pathomechanics of Hip After Shelf Operation. I. Ponseti.—p. 229.
Early Secondary Closure Following Saucerization for Chronic Infection of Bone: Preliminary Report. G. J. McKelvey.—p. 241.
Intertrochanteric Fractures and Fractures of Neck of Femur: Guide and Method of Procedure for Accurate Placement of Nail. H. H. Hopkins. —p. 244.
Simplification of Bankart's Capsulorrhaphy for Recurrent Dislocation of Shoulder. F. H. Downing.—p. 250.
Experience with Capsulorrhaphy for Recurrent Dislocation of Shoulder. O. R. Myers.—p. 253.
Rotation Osteotomy: Method Employed in Cases of Congenital Club Foot. R. Magnusson.—p. 262.
Deformities Following Surgical Epiphysial Arrest. J. Regan and C. C. Chatterton.—p. 265.
Lag-Screw Fixation in Fractures of Tibial Tuberosity. M. C. Cobey. —p. 273.
*Allergy of Joints. L. H. Criep.—p. 276.
Development of Squamous Cell Carcinoma in Sinus Tracts of Chronic Osteomyelitis. J. J. Niebauer.—p. 280.
Fixation of Transplanted Tibial Tubercle. D. M. Bosworth and F. R. Thompson.—p. 285.
*Biochemical Changes in Fracture Hematoma. O. Swenson.—p. 288.
*Spasmodic Torticollis: Severe Organic Types Treated by Combined Operation, Rhizotomy and Fusion. A. W. Adson, H. H. Young and R. K. Ghormley.—p. 299.
Intramedullary Pinning of Diaphysial Fractures. R. Soeur.—p. 309.
Reconstructive Surgery in Patients with War Fractures of Ankle and Foot. S. T. Snedecor.—p. 332.
Use of Pedicled Muscle Flaps in Surgical Treatment of Chronic Osteomyelitis Resulting from Compound Fractures. W. J. Stark.—p. 343.
Condylar Movement in Study of Internal Derangement of Temporomandibular Joint. M. Burman and S. E. Sinberg.—p. 351.
Review of Inception and Development of Type of Reparative Surgery Adapted to Bodily Mechanics. R. Whitman.—p. 374.
Bone Marrow Embolism Following Fracture. S. Lindsay and H. D. Moon.—p. 377.

Allergy of Joints.—Criep reports 4 cases in which recurrent transient articular involvement was caused by allergy to food. He differentiates five types of allergic arthropathies. First are cases of long standing chronic infectious arthritis which are thought to be due to bacterial allergy. In the second category is articular swelling resulting from sensitivity to a foreign serum or to a drug. The third group includes intermittent hydrarthrosis. In the fourth group are cases of Henoch's purpura associated with articular swelling and pain. The fifth group, which is exemplified by the cases reported here, comprises cases of acute transient paroxysmal articular involvement of joints characterized by pain, swelling and limitation of motion. The patient complains of excruciating pain which is migratory, sometimes involving the joints of the fingers, at other times involving the vertebral articulations or other joints. At the time of the examination nothing may be found and the patient may be labeled psychoneurotic. Diagnosis of subacute or even of acute rheumatic fever may be made, and the patient may be confined to bed needlessly for a long time. The mechanism of production of symptoms is probably the same as that in urticaria or angioneurotic edema; the shock tissue is the synovial membrane of the joint instead of the skin. The allergy is due to sensitivity to foods, and elimination of these foods may result in complete relief.

Biochemical Changes in Fracture Hematoma.—Swenson found that as the p_H of the fluid hematoma at the site of fracture became alkaline there was a great increase in the alkaline phosphatase and a moderate increase in the inorganic phosphorus level in the hematoma fluid. Biopsies were made of the fracture material, and in 6 out of 8 fractures there was definite calcification. In the remaining 2 there was questionable calcification. There was no demonstrable calcification in 6 fractures from which material for biopsy was obtained prior to these biochemical changes—that is, before there was elevation in the alkaline phosphatase. These experiments support the thesis that alkaline phosphatase is involved in calcification in fracture repair. The experimental evidence indicates that the phosphate ion concentration is increased at the site of calcification by a complex enzyme mechanism in which alkaline phosphatase is involved. This is contrary to the theory of fracture healing proposed by Stirling and Murray, who postulate that the high local acidity at the fracture site produces an ideal medium for an increase of calcium and that the subsequent change to local alkalinity in the fracture hematoma promotes precipitation of the calcium phosphates. Swenson thinks that the p_H changes may influence the calcium ion concentration in the fracture hematoma, but there are probably more decisive changes in the phosphate ion concentration which make possible a precipitation of some form of calcium phosphate.

Spasmodic Torticollis.—According to Adson and his associates the most difficult problem in spasmodic torticollis is to determine whether the manifestations are of psychogenic or organic origin, because surgical procedures are not justified in the psychogenic type. If remissions have occurred, the condition is probably of psychogenic origin. In the organic type the spasm is more likely to be tonic than clonic and hypertrophy of the affected muscle is greater than in the functional type. Spasm in the muscle disappears when the nerves are completely anesthetized in the organic type, while in the functional type the patient will continue to toss or jerk the head. Conservative treatment has not been encouraging, particularly in the organic type. The authors believe that the combined operation—bilateral intracranial section of the spinal accessory nerves and bilateral rhizotomy of the upper three cervical nerves, particularly the anterior roots, with the introduction of a bone graft at the same operation, is indicated for patients with severe muscle spasm on both sides, who are compelled to do manual labor, and for those who have large heads. The major operation on the nerves can be employed without a bone graft for patients whose occupations do not require manual labor. If difficulty in the forward tilting of the head should occur, with impairment in breathing, swallowing or speaking, a subsequent operation for fusion could be performed. This combined operation of section of nerves and fusion of bone is a major procedure and should be employed only when the patient is incapacitated as the result of spasmodic torticollis.

Journal of Urology, Baltimore

55:441-570 (May) 1946

Crossed Renal Ectopia with Fusion. C. K. Pearlman and I. R. Harwood. —p. 441.
Polycystic Disease in Solitary Kidney. H. E. Carlson.—p. 443.
Papilloma of Ectopic Kidney: Case Report and Review of 22 Tumors in Ectopic and Ptotic Kidneys. J. B. Gilbert.—p. 445.
Four Urologic Anomalies in One Person. R. A. Way and H. Popper. —p. 454.
Ectopic Ureter. E. M. Honke.—p. 460.
Endometriosis of Urinary Bladder with Report of Case. E. A. Ockuly and F. C. Helwig.—p. 464.
Cystometry in Study of Traumatic Neurogenic Bladder. R. B. Mullenix. —p. 470.
Late Erosion of Shell Fragment into Bladder. J. K. Lattimer.—p. 483.
Cancerous and Precancerous Lesions of Penis: Clinical and Pathological Study Based on 23 Cases. M. M. Melicow and E. J. Ganem.—p. 486.
Prolapsus of Ureterocele Through Urethra: Case Report. Marie Ortmayer, Louise Koester and Perle M. Stetler.—p. 515.
Primary Melanoepithelioma of Female Urethra: Review of Literature; Report of 3 Cases. G. C. Long, V. S. Counseller and M. B. Dockerty. —p. 520.
Lymphosarcoma of Testicle: Report of Case. C. P. Mathé.—p. 530.
Hemangioma of Testis in Infant. A. A. Rosenthal.—p. 542.
Report of Case of Splenic Rest in Scrotum. S. E. Andrews and E. F. Etter.—p. 545.
Prevention of Renal Complications by Therapeutic Employment of Sulfonamide Mixtures: I. Sulfathiazole-Sulfadiazine Combination. D. Lehr. —p. 548.
Modification of Nesbit Resectoscope. G. O. Baumrucker.—p. 567.

Kentucky Medical Journal, Bowling Green

44:141-160 (April) 1946

Significance of Rh Factor. E. S. Maxwell.—p. 144.
Fulminating Meningococcemia: Report of 12 Cases. C. C. Rotondo, E. P. Scott and N. I. Handelman.—p. 146.
Endocrine Disorders as Related to Pelvic Pain. R. G. Culley.—p. 149.
Evaluation of Methods for Early Diagnosis of Pulmonary Tuberculosis. W. P. Humphrey.—p. 151.

44:161-184 (May) 1946

Rehabilitation: A Medical Challenge. H. A. Rusk.—p. 163.
Medicine in the Postwar World. M. Fishbein.—p. 169.
Treatment of Diabetes Mellitus. A. D. Kennedy.—p. 174.

New England Journal of Medicine, Boston

234:519-544 (April 18) 1946

*Clinical and Laboratory Studies of Relapsing Vivax Malaria of Pacific Origin. H. H. Gordon, A. Marble, S. W. Lippincott and others. —p. 519.
*Longevity with Ventricular Aneurysm: Report of Case with Survival Period of Fifteen Years. S. L. Penner and M. Peters.—p. 523.
Osseous Gaucher's Disease with Macrocytic Normochromic Anemia: Report of Case. R. Fienberg and G. E. Quigley.—p. 527.
Surgery of Heart and Structures Related to It. J. W. Strieder.—p. 531.
Neurinoma of Stomach.—p. 535.
Carcinoma of Stomach.—p. 537.

Relapsing Vivax Malaria.—Gordon and his associates report observations on 808 soldiers admitted to the malaria section of the Harmon General Hospital from Pacific areas. Although the patients came from areas in which falciparum malaria was endemic, and although many of them stated that some of their previous malarial attacks had been caused by Plasmodium falciparum, this organism was demonstrated in only 1 of 864 clinical attacks, and in this case it contributed to a mixed infection with Plasmodium vivax. This evidence supports the statement that the use of quinacrine in adequate doses completely cures falciparum malaria. The clinical features of vivax malaria observed in these patients differed from those in falciparum infections. The infectiousness of patients with clinical attacks of malaria depends on the presence of gametocytes in the peripheral blood. Thin smears were examined for gametocytes in 401 attacks. In 196 (49 per cent) they showed gametocytes. In only 41 attacks (16 per cent) did blood smears taken daily or twice daily show two or more gametocytes per hundred white cells, a level at which infection of mosquitoes is considered likely. Since prompt initiation of treatment quickly eradicates parasites, there is little danger of transmission of the disease if it is diagnosed promptly and if treatment is begun immediately after a positive smear is obtained. This does not mitigate the need for mosquito control. Symptoms of the acute attack were rapidly controlled by the administration of quinacrine in doses that yielded a fasting plasma concentration of 40 to 50 micrograms per liter. Following such treatment 67 per cent of 287 patients had relapses in six or seven months. Approximately half of these relapses occurred within sixty days. The complement fixation test with an antigen prepared from Plasmodium gallinaceum gave a positive reaction in approximately 50 per cent of tests performed on each of the first five days of 234 recurrences, but 64 per cent of 891 tests performed during the intervals between 100 proved attacks were negative. In its present form the test does not detect latent malaria in a sufficiently high percentage of cases to be of practical value.

Longevity with Ventricular Aneurysm.—Penner and Peters say that the prognosis of ventricular aneurysm has heretofore been considered as grave, not so much because of the presence of the outpouching of the ventricular wall per se as because this phenomenon is indicative of extensive myocardial damage. Cases have been reported in which survival has lasted for as long as eight to ten years. The authors report that a patient who survived a severe attack of myocardial infarction with subsequent ventricular aneurysm was alive and in reasonably good health fifteen years after the acute episode.

New York State Journal of Medicine, New York

46:945-1056 (May 1) 1946

Tropical Lichen Planus—New Guinea Variety: Clinical Report on 24 Cases. L. Dantzig and L. E. Marshall.—p. 991.
Bicipital Syndromes and Their Treatment. J. M. Tarsy.—p. 996.
Inhalation Treatment of Bronchial Asthma. A. L. Barach.—p. 1002.
Report of Poliomyelitis Cases from Hospital for Special Surgery of New York City. K. G. Hansson and L. R. Straub.—p. 1009.
Prognostic Value of Sodium Amytal Test in Hypertension Managed by Thoracolumbar Sympathectomy. J. W. Hinton and J. W. Lord Jr. —p. 1015.
Proctoscopy and Barium Colon Study in Diagnosis of Rectal Conditions. I. Skir.—p. 1017.
Occult Maxillary Antrum Infection. J. Popper.—p. 1019.
Paraesophageal Hiatal Hernia: Case Manifesting Gastrointestinal and Cardiac Symptoms and Presenting Itself on X-Ray as Mediastinal Tumor. M. Herman and E. Singer.—p. 1020.
Ovarian Cyst in Content of Inguinal Hernial Sac. W. J. Fusaro. —p. 1024.

Occupational Medicine, Chicago

1:333-424 (April) 1946

Application of Military Mental Hygiene to Industry. R. R. Cohen. —p. 333.
Program of Malarial Surveillance for Industrial Physician. F. H. Shillito.—p. 345.
*Aplastic Anemia Following Exposure to Trinitrotoluene: Report of 3 Cases. R. F. Sievers, R. L. Stump and A. R. Monaco.—p. 351.
Clinical Test for Effort Tolerance. R. J. Van Amberg.—p. 363.
Method for Evaluation of Protective Ointments. L. Schwartz, H. S. Mason and Heloise R. Albritton.—p. 376.
Outbreak of Scabies in Stenographers. J. Markel.—p. 386.
Arsine Poisoning: Report of Case. G. F. Hawlick and E. B. Ley. —p. 388.
Contact Dermatitis Due to DDT: Report of Case. M. L. Niedelman. —p. 391.

Aplastic Anemia Following Exposure to Trinitrotoluene.—According to Sievers and his associates the clinical manifestations of serious trinitrotoluene poisoning are of two types: toxic hepatitis and aplastic anemia. Two of 3 patients who developed aplastic anemia following exposure to trinitrotoluene died. The third patient is having a temporary remission, is making a spontaneous recovery or is responding to therapy. In case 1 there was clinical evidence that toxic hepatitis preceded the onset of aplastic anemia. Necropsy revealed hypoplastic bone marrow and subacute atrophy of the liver. The second patient died shortly after the completion of a sternal puncture. Death was attributed to cerebral embolism. Although the administration of large daily doses of pyridoxine to 2 of the patients gave equivocal results, further clinical trial of the drug is recommended in aplastic anemia.

Physiological Reviews, Baltimore

26:169-318 (April) 1946

Sympathomimetic Amines: Relation of Structure to Their Action and Inactivation. K. H. Beyer.—p. 169.
Fixation of Carbon Dioxide and Interrelationships of Tricarboxylic Acid Cycle. H. G. Wood.—p. 198.
Effect of Body Temperature on Drug Action. F. A. Fuhrman.—p. 247.
Lipins and Lipidoses. S. J. Thannhauser and G. Schmidt.—p. 275.

Public Health Reports, Washington, D. C.

61:697-724 (May 17) 1946

Shadowed Replicas of Tooth Surfaces. D. B. Scott and R. W. G. Wyckoff.—p. 697.
Preparations of Antigens from Yolk Sacs Infected with Rickettsiae. N. H. Topping and C. C. Shepard.—p. 701.
Tropical Disease Education Program of United States Public Health Service. W. S. Boyd, T. H. Stubbs and P. P. Weinstein.—p. 707.

61:725-760 (May 24) 1946

Training Public Health Workers: Programs Sponsored by State Health Departments Under Title VI of Federal Social Security Act and Federal Venereal Disease Control Act (1936-1944). J. W. Mountin and Emily K. Hankla.—p. 725.

61:761-800 (May 31) 1946

Nature of Soluble Antigen from Typhus Rickettsiae. C. C. Shepard and R. W. G. Wyckoff.—p. 761.
Antibacterial Action of Penicillin, Penicillin X and Streptomycin on Hemophilus Influenzae. W. L. Hewitt and Margaret Pittman.—p. 768.
Method for Preparation of Tsutsugamushi (Scrub Typhus) Antigen from Infected Yolk Sacs. N. H. Topping and C. C. Shepard.—p. 778.
*Outbreak of Q Fever in the United States. J. V. Irons, N. H. Topping, C. C. Shepard and H. R. Cox.—p. 784.

Outbreak of Q Fever.—Irons and his associates say that in March 1946 an explosive outbreak of an acute febrile illness, which has been identified as Q fever, occurred at Amarillo, Texas. More than 40 cases have been found. The illness varied from mild influenza-like attacks to severe pneumonitis or atypical pneumonia. There were two deaths. Cases occurred among employees of a stockyards and meat packing company and in railroad workers and others working around the stockyards. Convalescent serums or serums from recovered cases had high complement fixation titers with several Q fever antigen preparations. Agglutination tests with Q fever rickettsial suspensions gave positive results in agreement with complement fixation findings. All tests performed for other acute febrile conditions gave negative results.

Surgery, St. Louis

19:577-756 (May) 1946

Evolution of Neurosurgery Through Walter E Dandy's Work. D. Fairman.—p. 581.
Complete Extracapsular Excision of Tumors of Hypophysis. G. Hugo Dickmann.—p. 605.
Cranial Nerve Surgery in Posterior Fossa. F. A. Verbreek.—p. 612.
Repair of Cranial Defects by Bone Grafting. R. A. Money.—p. 627.
*Cephalhematoma Deformans: Late Developments of Infantile Cephalhematoma. A. Schüller and F. Morgan.—p. 651.
Concussion and Contusion. R. D. Wright.—p. 661.
Hypothalamic Syndrome and Periventricular Epilepsy as Late Sequel of Brain Injury: Report of Case with Autopsy. L. B. Cox.—p. 669.
Contralateral, Ipsilateral and Bilateral Representation of Cutaneous Receptors in Somatic Areas I and II of Cerebral Cortex of Pig, Sheep and Other Mammals. C. N. Woolsey and D. Fairman.—p. 684.
*Surgical Treatment of Vascular Anomalies of Premotor Area Producing Epilepsy. F. L. Reichert.—p. 703.
Importance of Air Studies in Neurosurgical Clinic. G. Horrax.—p. 725.
*Innervation of Veins: Its Role in Pain, Venospasm, and Collateral Circulation. A. de Sousa Pereira.—p. 731.
Practice of Surgery in Japanese Prison Camp Hospitals in Burma and Siam. A. E. Coates.—p. 743.
Cerebral Fungus Following Penetrating Wounds. E. H. Campbell Jr. and J. Martin.—p. 748.

Cephalhematoma Deformans.—A unilateral bulging of the anterior part of the skull was presented by a man and 4 women aged 20, 27, 54, 71 and 72 respectively. It was unusual for the patients to complain of symptoms referable to the cranial abnormality. X-ray examination revealed an extensive hyperostosis as the basis of the deformity. Diploetic hyperostosis prevailed in the calvaria and eburnated hyperostosis in the basal area. Osteoporosis and sclerotic islands, large sequestrum-like fragments of bone and sharply outlined cavities inside the diploe were characteristic features of the structure. Pneumatization was wanting or atypical in the hyperostotic area. The name cephalhematoma deformans seems adequate for this peculiar type of hyperostosis.

Surgical Treatment of Vascular Anomalies of the Premotor Area Producing Epilepsy.—Fifteen patients were treated for epileptic seizures due to vascular anomalies in the premotor region. The follow-up period was at least five years. The treatment consisted in coagulation of the vascular lesions, and the results indicate that the procedure was feasible and satisfactory. Nine of the 15 patients had premotor signs. Six patients, besides having the cortical vascular anomalies, had one or more dural angiomas. Four patients had cortical angiomas or hemangiomas. Callosal angiomas were proved in 3 by ventricular needle puncture. In these three callosal angiomas the ventriculograms showed a new sign of separation of the bodies of the ventricles. Coagulation of the abnormal vessels frequently produced a transient hemiplegia until normal collateral vascular channels developed. Subtemporal decompression made a smoother convalescence if employed when there was disturbance of cortical circulation resulting from coagulation. Intravenous hypertonic solutions aided in overcoming the cerebral edema that followed the disturbance of circulation incident to the operative coagulation. Two of the 15 patients had only temporary relief from seizures; 7 had milder and less frequent attacks and 6 had no seizures after operation.

Innervation of Veins.—According to de Sousa Pereira the nerves of veins, arteries and lymphatic vessels involved in cancer are responsible for much of the pain. For this reason a knowledge of the vascular innervation is a prerequisite for the treatment of pain in cancer by means of sympathetic operations. The author analyzed (1) the afferent pathways of the innervation of the veins in relation to pain and (2) the efferent vasomotor pathways in relation to venospasm and also to the development of the collateral circulation of the veins. He concludes that veins are innervated by afferent sensory and efferent vasomotor pathways. Direct mechanical or chemical stimulation of the afferent pathways at the level of the wall of the veins may cause pain. The relief of venous pain and venospasm in acute phlebitis and thrombophlebitis by intravenous anesthesia of the inflamed vein or by the anesthetic block of the sympathetic chain suggests that venospasm may play an important role in the mechanism of pain.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine, Liverpool

40:1-116 (April) 1946

Immunity of Mice Cured of Trypanosome Infections. J. D. Fulton and E. M. Lourie.—p. 1.
Coelomomyces Fungi Causing High Mortality of Anopheles Gambiae Larvae in Rhodesia. J. Muspratt.—p. 10.
Incubation of Tsetse Pupae: Increased Transmission Rate of Trypanosoma Rhodesiense in Glossina Morsitans. E. Burtt.—p. 18.
Serum Albumin and Globulin Levels in Africans as Compared with Europeans, with Note on Technic. A. F. Mohun.—p. 29.
Taxonomy of Ethiopian Sandflies (Phlebotomus): I. Classification and Synonymy. R. Kirk and D. J. Lewis.—p. 34.
Use of Avian Malaria for Discovery of Drugs Effective in Treatment and Prevention of Human Malaria: I. Drugs for Clinical Treatment and Clinical Prophylaxis. D. G. Davey.—p. 52.
Sex Ratio of Infected Flies Found in Transmission Experiments with Glossina Morsitans and Trypanosoma Rhodesiense. E. Burtt.—p. 74.
Action in Vitro of Diamidines and Other Compounds on Leishmania Donovani. H. O. J. Collier and E. M. Lourie.—p. 88.
Studies on Synthetic Antimalarial Drugs: XV. Hydrolytic Determination of Paludrine. A. Spinks and Mary M. Tottey.—p. 101.
Technic for Obtaining Bacteria-Free Suspensions of Sporozoites from Salivary Glands of Infected Mosquitoes. R. M. Gordon and M. A. Hill.—p. 113.

British Journal of Experimental Pathology, London

26:363-430 (Dec.) 1945

Experimental Production of Urate Calculi in Urinary Tract of White Rats. H. Ungar.—p. 363.
Enzymes of Healing Wounds: II. Effect of Different Degrees of Vitamin C Deficiency on Phosphatase Activity in Experimental Wounds in Guinea Pig. J. F. Danielli, H. B. Fell and E. Kodicek.—p. 367.
Differential Centrifugalization of Intranuclear Particles in Bean Root and in Animal Tissues. J. C. Mottram and F. R. Selbie.—p. 377.
Gray Lung Virus: Agent Pathogenic for Mice and Other Rodents. C. H. Andrewes and R. E. Glover.—p. 379.
Specific Blood Group O Substance. W. T. J. Morgan and M. B. R. Waddell.—p. 387.
Fracture Metabolism at Different Levels of Protein Intake. H. N. Munro and M. I. Chalmers.—p. 396.
Production of Antibiotics by Fungi. A. H. Cook and M. S. Lacey.—p. 404.
Influence of Temperature on Adaptation of "Tetrathionase" in Washed Suspensions of Bact. Paratyphosum B. M. R. Pollock.—p. 410.
Biosynthesis of Tryptophan by Bact. Typhosum. P. Fildes.—p. 416.

British Medical Journal, London

1:711-750 (May 11) 1946

Economic Status and Hemoglobin Level of Children of Men in Fighting Services and of Civilians. Helen M. M. Mackay, Lucy Wills and Kaitilin Bingham.—p. 711.
*Weil's Disease: Occurrence Among Workers in Welsh and Scottish Coal Mines. T. H. Jenkins and W. C. Sharp.—p. 714.
*Insulin Shock Treatment of Bronchial Asthma. Z. Godlowski.—p. 717.
Carcinoma of Lip and Its Treatment by Radium (1928-1944). A. A. Charteris.—p. 719.
Pyloric Stenosis: Selective Medical and Surgical Treatment; 50 Successive Cases Without a Death or Failed Medical Treatment. N. M. Jacoby.—p. 721.

Weil's Disease Among Workers in Coal Mines.—Jenkins and Sharp state that cases of leptospiral jaundice occur among Scottish and South Wales mine workers with such regularity and such a high mortality rate as to make the disease a definite occupational risk in mines which are wet and infested with rats but which form a small proportion of the colliery undertakings in both regions. Rats gain access via levels, drifts or slants and possibly with horse feed. In most cases live rats caught in the mines have been proved to harbor Leptospira, which has also been isolated from specimens of pit water and slime. Proof of the diagnosis is by positive agglutination reactions in ascending titers. Approximately 33 per cent of the recorded cases were fatal. Two to three months is the usual period of illness. One attack confers immunity. Determined efforts at rat extermination are of primary importance and should be so coordinated as to deal with surface and underground problems simultaneously.

Insulin Shock Treatment of Bronchial Asthma.—Godlowski selected for insulin treatment patients with bronchial asthma of allergic etiology. Of 8 patients with allergic bronchial asthma 7 responded to insulin shock treatment with complete disappearance of symptoms to the present time, from

eight months to two and one-half years. One allergic patient responded with a transitory subsidence lasting five months. Three patients with nonallergic bronchial asthma did not respond to this treatment, although during the shock itself each of these patients felt relief for a few hours. Insulin shock treatment in bronchial asthma seems to operate by means of a stimulus to the adrenal medullas, inducing a hyperproduction and dissipation of epinephrine. This action must be regarded as a defensive measure of the organism itself against the toxic action of massive doses of insulin.

Indian Medical Gazette, Calcutta

81:1-56 (Jan.) 1946. **Partial Index**

Encysted Pleural Effusions. R. Viswanathan.—p. 1.
Pathogenesis of Pulmonary Atelectasis. R. Viswanathan.—p. 4.
Mediastinal Emphysema. N. Gupta.—p. 9.
Unusual Developmental Abnormality of Arms. K. A. Shah and S. B. Shah.—p. 10.
Analysis of 242 Cases of Sprue in Indian Troops. P. V. Karamchandani and G. Hyder.—p. 11.
Toxicity of Some Organic Antimonial Drugs Used for Treatment of Kala-Azar. A. N. Bose, T. N. Ghosh, S. N. Mitra and S. Datta. —p. 13.
Cause of Hyperglycemia Under General Anesthesia. P. De.—p. 17.
Novocaine Infiltration in Acute Sprains. J. K. Mohanty.—p. 19.
Note on Phlyctenular Ophthalmia in Adults. M. A. Shah.—p. 20.
*The "Burning Feet" Syndrome. C. Gopalan.—p. 22.

"Burning Feet" Syndrome.—Gopalan says that the disorder described under the term of "burning feet" is a definite clinical entity. It appears to be common among the poor in South India. It is decidedly more common than "peripheral neuritis" associated with thiamine deficiency. Outbreaks of "burning feet" have previously been reported among malnourished populations and have often occurred in jails. The author investigated 53 cases of burning feet. All patients were rice eaters, living mostly on rice gruel and vegetables. The majority were between the ages of 20 and 40, and 39 of the 53 were women. The patients showed evidence of malnutrition. Signs suggestive of riboflavin deficiency were almost invariably present. Inflammation of the angles of the mouth was present in a majority of cases. The burning sensation is usually confined to the soles of the feet but is present in some cases in the palms as well. A feeling of "pins and needles" in the distal part of the extremities is also complained of but is distinct from the burning sensation. The symptoms were relieved by an autolyzed yeast extract, which is used for its antineuritic vitamin influence, also by injections of calcium pantothenate, but were not influenced by thiamine, nicotinic acid and riboflavin.

Journal of Neurol., Neurosurg. & Psychiatry, London

8:49-128 (July & Oct.) 1945

Drug Treatment in Epilepsy. A. J. M. Butter.—p. 49.
Thalamic Degeneration Following Bilateral Premotor Frontal Lobe Atrophy of Strümpell Type. R. M. Norman.—p. 52.
*Static Tremor in Anxiety States. J. D. P. Graham.—p. 57.
Recommendations for Design and Performance of Electroencephalographic Apparatus. G. D. Dawson and W. G. Walter.—p. 61.
Rhythmic Slow Discharges in Electroencephalogram. W. A. Cobb.—p. 65.
Investigation of Vestibular Function After Head Injury. D. G. Phillips. —p. 79.
Subacute Sclerotic Leukoencephalitis. L. Van Bogaert.—p. 101.
Effect of Age, Head Resistance and Other Physical Factors on Stimulus Threshold of Electrically Induced Convulsions. D. Watterson.—p. 121.

Static Tremor in Anxiety States.—Static tremor is present when the part is being voluntarily held still against the force of gravity—as when the arm is held outstretched. It may be defined as an irregular involuntary movement of small excursion and rapid rate, resulting from contraction of the opposing skeletal muscles in use to keep the part in its static position. This definition serves to distinguish it from voluntary movement, shivering, athetosis, choreiform movement and jactitation and convulsions. Tremor varies in different subjects and from time to time in any one subject, being accentuated by hunger, fatigue and senility. Tremor in young or middle aged patients may be due to toxicity (alcoholism, thyrotoxicosis), central nervous disease or anxiety. Tremor is a common feature of the anxiety state. Tremor of the right index finger was recorded in 52 normal subjects and in 100 patients with anxiety. The normal tremor was noticeable clinically in 25 per cent of subjects. Anxiety gave rise to an increase in amplitude of the tremor. Anxiety tremor is considered to be a development of physiologic static tremor as a result of augmentation of the motor side of a proprioceptive reflex of the "antigravity" muscles due to facilitation of the motor neurons by central influences.

Medical Journal of Australia, Sydney

1:493-536 (April 13) 1946

"Thio" Drugs in Thyrotoxicosis. H. R. G. Poate and S. L. Spencer. —p. 493.
*Hospital Blankets as Source of Infection. Phyllis M. Rountree and Jean E. Armytage.—p. 503.
Spontaneous Rupture of Spleen, with Notes on 2 Cases. K. M. Bowden. —p. 506.
Notes on West's Operation (Endonasal Dacryocystostomy). G. A. D. McArthur.—p. 508.
New Conceptions of Malaria Control. C. E. M. Gunther.—p. 510.

Hospital Blankets as Source of Infection.—Rountree and Armytage carried out an investigation in a general surgical ward and an ear, nose and throat ward of the flora of the blankets, dust and air and of the upper respiratory tract and wounds of the patients. Of a total of 45 throat swabs taken in the two wards hemolytic streptococci were isolated from 10. Material from the swabs from 24 wounds in the surgical ward was cultivated and suggested the presence of a heavy infection. Ten wounds of 24 examined may reasonably be considered to have been infected at or after operation. Staphylococcus aureus was isolated from 10 of these wounds and hemolytic streptococci were found in 2. Forty-seven blankets were examined. The total number of blankets from which hemolytic streptococci were isolated was 30. From 19 of these, streptococci were isolated in numbers varying from 20 to 13,500 per cubic foot of air; 3 blankets yielded streptococci in numbers varying from 50 to 660 per cubic foot of air, and from 8 blankets hemolytic streptococci were grown in numbers ranging from 90 to 390 per cubic foot of air. The counts of the total numbers of organisms sucked from the blankets varied from 14,400 per cubic foot of air to 7,344,000, the lowest counts being obtained from new unwashed blankets, from which very little of the fiber is removed during suction. The results show the large bacterial load carried by the blankets. Hospital blankets are to be considered as a possible source of ward infections, and measures should be found to overcome this problem.

1:537-572 (April 20) 1946

Further Observations on Rh and Hr Factors, and Blood Group Frequencies in Papuans. R. T. Simmons, J. J. Graydon and E. F. Woods. —p. 537.
*Treatment of Hospital Blankets with Oil Emulsions and Bactericidal Action of "Fixanol C" (Cetyl Pyridinium Bromide). Phyllis M. Rountree.—p. 539.
Notes on Field's Stain. P. M. de Burgh.—p. 544.
Spinal Anesthesia and Chloroform: Comparison of Mortality. C. E. Corlette.—p. 545.
Bleeding Tendency in Obstructive Jaundice: Diagnosis and Management. P. Fantl.—p. 547.
Basic Wage, Shortage of Nurses and Social Medicine. E. S. Meyers. —p. 548.

Oiling of Hospital Blankets and Bactericidal Action of Cetyl Pyridinium Bromide.—In vitro experiments carried out by Phyllis Rountree with a cationic detergent the active principle of which is cetyl pyridinium bromide demonstrated that this substance, called "Fixanol C," is an active bactericide against a large number of gram-positive and gram-negative organisms. "Fixanol C" was incorporated in an oil-water emulsion and sprayed onto hemolytic streptococci dried on sterile fluff; the bacteria were killed rapidly. It was thus established that "Fixanol C" when used to stabilize oil-water emulsions retains the bactericidal action it has shown to exert in vitro. Additional experiments showed that "Fixanol C" when impregnated into blankets in a concentration of 1 part in 800 during an oiling process imparts an efficient bactericidal action to blankets so treated; pathogenic organisms such as hemolytic streptococci, staphylococci and clostridia were effectively destroyed in such numbers as may be added to the blankets from discharges or by the coughing or sneezing of the patients whom they cover. Blankets treated with "Fixanol C" and oil

retain their bactericidal power for periods of at least three months. They should prove to be a valuable weapon in the control of cross infection in hospital wards in the nursing of both surgical patients and patients with infectious diseases.

Archives des Maladies du Cœur, Paris

38:257-328 (Nov.-Dec.) 1945

Aortic Stenosis Due to Calcification of Syphilitic Valvular Lesions. R. Froment and A. Gonin.—p. 257.
Atheromatous Coronary Angor with Precocious Onset and Parallel Course in Twins. R. Froment, P. Guinet, G. Vignon and Martin-Noel.—p. 260.
Cardiodynamometry: Practical Proof of Determination of Functional Value of Heart. A. Pruche.—p. 264.
*Improvement of Electrocardiographic Diagnosis by Anoxemia Test. J. P. Chapuis, E. Jéquier-Doge and G. Werner.—p. 277.
Auscultatory Signs of Pulmonary Stenosis. D. Routier and J. E. Escalle. —p. 284.
Changes of P Wave of Coronary Origin. P. Dailheu-Geoffroy and D. Routier.—p. 285.
Recurrent Pericardiac Effusion Treated with Thyroid. J. M. Boivin. —p. 289.
Pulmonary and Cardiac Actinomycosis. P. Soulié, Y. Bouvrain, G. Roche and J. R. Sicot.—p. 292.
Results Obtained with Intracavitary Direct Derivation of Electric Currents of Right Auricle and Ventricle. J. Lenègre and P. Maurice. —p. 298.

Anoxemia Test Aid in Electrocardiographic Diagnosis.—Chapuis and his associates performed anoxemia tests on 30 normal persons and on 90 patients who months or years before had diphtheria, acute polyarticular rheumatism or pneumonia and were suspected to have myocardial lesions. The test was also performed on a few persons with angina pectoris with normal electrocardiogram when at rest or after exertion. The oxygen concentration used varied from 5.4 per cent to 11 per cent, which corresponded to a partial oxygen tension of 41 to 79 mm. or to conditions prevailing at an altitude of 5,200 meters (17,160 feet) to 11,000 meters (36,300 feet) above sea level. The three standard leads and precordial leads 4 R or F were taken. Pathologic changes in the electrocardiogram were revealed during anoxemia in many of the patients whose electrocardiographic tracings had been normal when at rest or after exertion. The test is harmless and may be performed on bedridden patients and on those whose work capacity is considerably reduced. Changes in the electrocardiograms due to sympathicotonia disappear during the anoxemia after the administration of a sympathicolytic, which however has no effect on the electrocardiographic changes due to organic causes. Usually the most characteristic changes in the form of the electrocardiogram were revealed in the D 4 F lead.

Bruxelles-Médical, Brussels

26:461-502 (May 4) 1946

*Arteriectomy in Arteritis Obliterans of Aged Persons Based on 144 Observations. R. Leriche.—p. 471.
Considerations on Nephropexy. R. Quackels.—p. 477.
Hypertrophy of Pylorus in Adults. A. Bernaerts.—p. 482.

Arteriectomy in Arteritis Obliterans of Aged.—Leriche reports 144 cases of arteriectomy in the aged, among them 2 with excision of the damaged section of the aorta, 17 with excision of the external iliac artery and 22 with excision of the deep femoral artery. Satisfactory permanent results were obtained in 45 to 50 per cent of the cases. The foot became warm, nocturnal pains subsided, edema and erythrosis disappeared, and intermittent claudication, although refractory, disappeared within several months to one year. Secondary amputation was required in 27 cases. There were 9 fatal cases. Arteriography shows whether or not the main course below the obliterated section is filled again, thus suggesting whether an arteriectomy may be successfully performed. Oscillometry is much less indicative. Most of the author's failures were caused by the rapid occurrence of dry gangrene. There are cases in which any surgical intervention may hasten the appearance of complete ischemia, probably by the associated vasomotor disorder. In the presence of a satisfactory general condition the chances for success may be improved by combined lumbar gangliectomy and arteriectomy. These were performed in 9 cases. Early excision of the damaged section of an artery involved is important and it should be extensive, 15 to 25 cm. of the superficial femoral artery. Arteriectomy is to be considered the treatment of choice for preventing gangrene in cases of arteritis obliterans in the aged.

Schweizerische medizinische Wochenschrift, Basel

76:189-212 (March 9) 1946

*Inflammations of Accessory Nasal Cavities and Penicillin Treatment. L. Rüedi.—p. 189.
Vitamin E and Habitual Abortion. R. Abderhalden.—p. 196.
Panmyelopathy in Course of Bang's Disease (Cure with Penicillin). R. Lapp and G. Hemmeler.—p. 198.
Thrombolysis, Secondary Hemorrhage and Embolism. M. Zehnder. —p. 201.
Comparative Study of Action of Prolactin, Estrone, Testosterone and Progesterone on Mammary Apparatus and Genital Organs of Newborn. H. Slobozianu.—p. 203.

Penicillin Treatment of Accessory Nasal Cavities.—Rüedi reports 5 cases of chronic pansinusitis polyposa in a man aged 21, in a boy aged 15, in 2 women aged 25 and 31 and in a girl aged 14. Intramuscular injections of penicillin were given every three hours with a daily dose of 100,000 units and with a total dose of 600,000 to 1,200,000 units. In some of the cases this was combined with daily instillation of 2,000 to 4,000 units (total dose 54,000 units) in the irrigated frontal and maxillary sinuses. Good results were manifested first by a rapid decrease and by complete disappearance of the suppuration and by definite disappearance of the polypous hyperplasia of the mucosa in the nasal region. Penicillin treatment was given to 4 additional patients with acute pansinusitis, a man aged 27 and 3 women between the ages of 19 and 40. All the accessory sinuses on one side were involved in 1 of the cases, and all accessory sinuses on both sides were involved in the 3 other cases. Roentgenologic examination within thirty days of the penicillin treatment demonstrated the clearing of all the sinuses. In 1 case of pathergic rhinopathy in a girl aged 15 administration of 100,000 units of penicillin daily with a total dose of 500,000 units proved ineffective. Penicillin treatment was of little effect in cases of chronic monosinusitis and in cases of chronic suppuration of accessory sinuses associated with bronchiectasis. The concept of a "bacterial-allergizing pansinusitis" comprising acute and chronic inflammations of the accessory sinuses is suggested, for which penicillin treatment is highly recommended.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

90:239-278 (March 30 & April 6) 1946. **Partial Index**

Laryngeal Cancer After Roentgen Irradiation. D. Den Hoed.—p. 242.
Secondary Oculo-Urethro-Articular Syndrome (Reiter's Disease). J. R. Prakken and M. Hartman.—p. 244.
Experiment to Promote Longitudinal Growth of Tubular Bones by Stimulation of Growth Region. G. Chapchal and J. Zeldenrust.—p. 249.
Crusade Against Venereal Diseases. J. J. Louwerse.—p. 255.
*Circulatory Disturbances in Hunger Edema. E. Lopes Cardozo and P. Eggink.—p. 258.

Circulatory Disturbances During Hunger Edema.—Patients with hunger edema treated by Lopes Cardozo and Eggink complained of fatigue, weakness and nycturia. They were slow in thinking and acting. The skin was hyperthermic and slightly cyanotic and had the faded yellowish color seen in secondary shock. The edema developed first in the lower part of the legs and under the eyes. Hunger edema was not seen in young men and children; it appeared occasionally in women, but chiefly in men over 40. The pulse was slow, the blood pressure was low and the heart sounds were weak. There was mild anemia, moderate reduction in the serum protein, slight increase in the urea and often a raised alkali reserve. The circulation time was prolonged in 22 of the 29 patients. The same condition was present in 4 of 5 undernourished patients who as yet had no hunger edema. The majority of these patients had bradycardia and hypotension. Electrocardiography revealed that the ventricular complexes were low in all leads. The basal metabolic rate was reduced. The authors think that there is a connection between bradycardia, hypotension, retarded circulation and low metabolism and that reduced plasma protein and hemostasis resulting from retarded circulation are important in the development of hunger edema. A high caloric, high protein diet is of great therapeutic value, but, if food absorption is impaired, infusion of large quantities of plasma is advisable.

Book Notices

Surgical Treatment of the Motor Skeletal System. Supervising Editor: Frederic W. Bancroft, A.B., M.D., F.A.C.S., Associate Clinical Professor of Surgery, Columbia University, New York. Associate Editor: Clay Ray Murray, M.D., F.A.C.S., Professor of Orthopedic Surgery, College of Physicians and Surgeons, Columbia University, New York. Part I: Deformities, Paralytic Disorders, Muscles, Tendons, Bursae, New Growths, Bones, Joints, Amputations. Part II: Fractures, Dislocations, Sprains, Muscle and Tendon Injuries, Birth Injuries, Military Surgery. In two volumes. Fabrikoid. Price, $20. per set. Pp. 612; 615-1254, with 1,062 illustrations. Philadelphia, London & Montreal: J. B. Lippincott Company, 1945.

This is a new work devoted to treatment of various disorders of the bones, muscles, tendons, joints and bursae. The book is divided into sections, of which there are fourteen and which are in turn subdivided into forty-four subsections written by a distinguished group of authors. Probably in no other field of surgery are there so many varieties of technics and appliances as are to be found in that known as orthopedics. The editors have carefully recognized this fact and have limited the material to that which is wholly pertinent to modern treatment. Discussion of diagnosis and etiology is scanty, therefore. As is usually the case, the sections containing general principles are among the most valuable, and in this instance section 22, on general discussions of fractures, dislocations and other trauma, is lucid and informative. In general descriptions of surgical technic are adequate and confined to one or two useful types of procedure. It should be emphasized that in a work such as this one illustration is worth the proverbially large number of words. The photographs and drawings are well chosen and ordinarily quite useful. One wonders about the value of figures such as 323. In addition to the specific treatment the after-care is exceedingly important and has been so recognized. The postoperative application of physical therapy and exercise could be delineated more fully with benefit. Recent experience has again underlined the necessity of careful application of therapeutic principles in restoration of function. There are of course many subjects in which opinion as to proper method is in a state of flux, including poliomyelitis, amputation (including refrigeration), lesions of the shoulder girdle and low back pain. In addition the recently introduced antibiotics may completely alter concepts considered almost sacred to surgery in the management of certain infectious processes. The approaches to these subjects have been carefully gaged by the editors with an eye to the future. This edition will prove of value to surgeons and general practitioners for some time to come.

A Textbook of the Practice of Medicine. By Various Authors. Edited by Frederick W. Price, M.D., C.M., F.R.C.P. Oxford Medical Publications. Seventh edition. Cloth. Price, $13.50. Pp. 2,034, with 91 illustrations. New York, London & Toronto: Oxford University Press, 1946.

The last previous edition of this British textbook on medicine appeared in 1941. The present volume shows evidence of much rewriting and careful revision. The contributors include many of the best known authorities in the British Isles. The index contains numerous references to penicillin and none to streptomycin. Omission of the latter perhaps is desirable at this time for a textbook because information on its use is still so scanty. There are few illustrations, but this is probably necessary because of the already large bulk of the book. This revision represents a considerable improvement over the last previous edition.

Handbook for Psychiatric Aides. Section One: A General Guide to Work in Mental Hospitals. Prepared and Published by National Mental Health Foundation. Paper. Price, 50 cents. Pp. 58, with illustrations. Philadelphia, [n. d.]

With the aid of a number of physicians, workers in the National Mental Health Foundation have prepared a handbook for psychiatric aides which should be of great usefulness to those who must absorb in a short time a great deal of information about a variety of nervous and mental disorders and who must know at the same time what they can do to be helpful in the care of such cases. The pamphlet not only provides this information but also refers to articles, periodicals and books and has a glossary of terms frequently used.

Cornell Conferences on Therapy. Volume One. Edited by Harry Gold, M.D., and Others. Cloth. Price, $3.25. Pp. 322. New York: Macmillan Company, 1946.

Although many institutions have attempted to hold round table discussions on problems of therapeutics, none have met with the success attained by the Cornell Conferences on Therapy. Since their inception in 1937 the stenographic record, carefully edited, has been published, first in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION from 1937 to 1940 and since 1940 in the *New York State Journal of Medicine*. Because of the popular interest in these conferences, the editors have gathered together fifteen of them dealing with topics of general interest for publication in book form. The preface indicates that henceforth a selection of conferences held during the year will be collected and published in an annual volume.

Among the subjects of conferences which have been selected for inclusion in the present volume are the doctor's bag, use and abuse of bed rest, hypnotics and sedatives, treatment of heart failure, the use of the mercurial diuretics, the management of abdominal distention, the treatment of some common diseases of the eye and the Rh factor in therapy. These titles give some idea of the scope of this volume.

The emphasis is placed on therapy and particularly on drug therapy. For the most part the participants are members of the departments of pharmacology, medicine, pediatrics and surgery of Cornell University Medical College although in a few instances authorities from other institutions nearby have been invited to discuss their particular specialty.

This book can be recommended both to medical students and to practicing physicians as an interesting, readable and authoritative discussion of selected topics in therapeutics.

O patogeneze "insulinovogo shoka" (materialy k vopросu o mekhanizme deystviya insulina). [By] V. P. Komissarenko. [Pathogenesis of "Insulin Shock": Mechanism of Action of Insulin.] Akademiya Nauk USSR Institut Klinicheskoy Fiziologii. Paper. Price, 10 rub. Pp. 142. Kiev: Izdatelstvo Akademii Nauk USSR, 1943.

The author stresses that the extensive literature on insulin shock is devoted mainly to clinical observations. Investigation of the mechanism of the action of toxic doses of insulin and in particular its effect on the central nervous system have received little attention. The pathogenesis of insulin convulsions and insulin coma, the question of whether insulin convulsions and coma are caused by hypoglycemia or by tissue asphyxia, as well as the mechanism of terminating insulin convulsions by intravenous or peroral introduction of glucose, have not been elucidated.

The first half of the monograph is devoted to a review of the existing literature. The second half concerns experiments carried out by the author in an attempt to elucidate the pathogenesis of insulin convulsions and insulin coma and of the modus operandi of terminating the convulsions by introduction of glucose. The author's experiments demonstrate that the absorption by the brain tissue of sugar from the blood is diminished at the height of the insulin effect and that there is a beginning accumulation in the brain tissue of lactic acid. Large doses of insulin depress the oxidizing processes in the cells of the brain tissue. Lactic acid is accumulated in larger quantities in brain tissue isolated from hyperinsulinized animals and incubated in vitro than in the brain tissue of control animals. The cells of the brain tissue of hyperinsulinized animals are in the state of hypoxia and therefore lose to a considerable degree the capacity for absorbing oxygen from the blood and for utilizing it for the processes of oxidation. Intravenous or peroral introduction of glucose rapidly terminates the insulin convulsions; the respiration of the brain tissue, however, recovers at a much slower rate. It recovers completely only after the disappearance from the blood of the excess of introduced sugar. Repeated thyroxinization of animals prevents the occurrence of insulin convulsions, probably because of acceleration in the brain of oxidizing processes. The introduction of glucose at the height of insulin intoxication increases the utilization by the brain tissue of the blood sugar and stimulates the fermentative oxidizing processes. As a result the oxidation processes of carbohydrates in the brain tissue are normalized, the irritation of brain cells is diminished and the convulsions cease. The author advances the idea that at the basis of insulin convulsions and coma is the diminution of utilization by the brain of blood

sugar, as well as hypoxia of the cellular elements of the brain. The diminished absorption of sugar is accompanied by diminished absorption of oxygen. Administration of large doses of insulin in dogs is accompanied by the gradual and continued fall in the blood pressure during the first three hours of the experiment. The intravenous introduction of glucose into such dogs does not restore the blood pressure. The analysis of the character of the blood pressure of respiration and of glycolytic activity of the brain tissue in animals after administration of large doses of insulin poses the question of the propriety of the term "insulin shock." The author feels that the term "insulin intoxication" would more accurately describe the phenomena.

Industrial Toxicology. By Alice Hamilton, A.M., M.D., and Rutherford T. Johnstone, M.D., Director of Department of Occupational Diseases, Golden State Hospital, California. Edited by Henry A. Christian, A.M., M.D., LL.D. [Reprinted from Oxford Loose-Leaf Medicine with the same page numbers as in that work.] Cloth. Price, $2.50. Pp. 597-663; (69). New York: Oxford University Press, 1945.

This small volume, coming from two able and experienced workers in the field, is most timely because of the great interest at present in industrial toxicology. The book is divided into three parts, devoted to (1) pathology and diagnosis, (2) treatment and prevention and (3) an extensive bibliography. The subject matter is concisely presented and covers the ordinary material encountered in a great variety of industrial pursuits. Some of the newer developments, mostly restricted information, are not contained in this volume; in subsequent editions, when the material is reclassified, it will no doubt be mentioned. The book should receive wide acceptance because in several institutions there is contemplated the establishment of either a department of industrial toxicology or a more comprehensive program in which industrial toxicology will form a division. Several of the industrial firms are also contemplating extensive developments, so that they will be able to examine new compounds for the possible toxicologic action and in this way anticipate possible trouble rather than to repair the danger after it is done. The authors and publishers should consider putting the volume out in a somewhat enlarged form and also some improvement in pagination. In its present form the book is readable and has the essential facts of toxicology succinctly presented.

Annual Review of Physiology. James Murray Luck, Editor. Victor E. Hall, Associate Editor. Volume VIII. Cloth. Price, $5. Pp. 658. Stanford University, California: American Physiological Society & Annual Reviews, Inc., 1946.

This is the eighth volume of the series of annual reviews of physiology. These books are invaluable as source material for investigators in physiology and medicine. Twenty-five reviews are presented, including chapters on ultraviolet radiation, genetics, metabolism, the digestive system, circulation, special senses, physiology of the skin, aviation physiology and other important subjects. The authors of the various sections have been encouraged to choose critically and evaluate data which have been published in their particular fields. As pointed out by the editors in the preface, the unavailability of foreign textbooks as a result of the war has continued to be a handicap. Further, many scientific topics are still under wartime control and cannot as yet be published. Despite these restrictions the wealth of material presented makes this book, as in previous years, an essential reference work.

Parálisis general: Estado actual y problemas. Por Roque Orlando, profesor adjunto de Clínica neurológica de la Facultad de medicina de Buenos Aires, y Maximo Arndt. Paper. Pp. 425, with 22 illustrations. Buenos Aires: Lopez & Etchegoyen S. R. L., 1945.

This work of Orlando and Arndt is based on much study of the sufferers from dementia paralytica. There are many chapters on the symptoms and the various types of syndromes that have been seen. These syndromes vary with the severity of the destruction produced by the spirochetes in different parts of the brain and cord. The authors take up the treatment of dementia paralytica, and they have a good chapter on the psychic disturbances which follow treatment with malaria. They present a number of case reports, and there is a large bibliography. This book should be of interest to all those who have to treat neurosyphilis.

Modern Management in Clinical Medicine. By F. Kenneth Albrecht, M.D., S. A. Surgeon, U. S. Public Health Service. Cloth. Price, $10. Pp. 1,238, with 248 illustrations. Baltimore: Williams & Wilkins Company, 1946.

The one volume system of medicine by a single author has been passing from the medical scene; yet now comes such a work apparently compiled from a vast amount of periodical and textbook literature, with color plates and illustrations. Some of the book is in outline form and there are many tabular compilations of assistance in differential diagnosis. The book begins with an article on the case history followed by nutritional deficiencies and then in order considerations of the conditions affecting various systems of the body. Occasionally a startling sentence springs from the text; for example, "Chancres on the left hand of dentists are not uncommon from the practice of using their left hand as a guard when grinding, extracting or retracting the cheek of infected patients." A few accurate statistics at this point would be interesting. There are sections on the skin diseases, on the nervous and mental diseases, on chemotherapy and on geriatrics. A special section of the book is devoted to the care of ambulatory patients, with a typical list of instructions to be given them. The diction is often colloquial in the extreme; for example, "if you have a temperature, you should rest in bed in a warm room." The author obviously means a fever. He recommends many proprietary products which have not been accepted by the Council on Pharmacy and Chemistry. A section on clinical laboratory medicine is provided by Seward E. Miller with many of the common tests and profuse illustrations. In an appendix there are many formulas and collected data. The index, which is detailed, offers easy reference to many questions.

Herencia normal y patológica en el hombre. Por el Dr. Temistocles Castellano, profesor titular de clínica médica, de la Facultad de medicina de Córdoba. Biblioteca argentina de medicina interna, Volumen III. Paper. Pp. 175, with 69 illustrations. Buenos Aires: Lopez & Etchegoyen S. R. L., 1945.

Dr. Castellano has written a book on inheritance, normal and pathologic, in man. In the first part of the book he discusses and illustrates the work that has been done in recent years on the mechanism of heredity. He shows how genes work. In the second portion he presents much information with regard to pathologic inheritances in man. He is particularly interested in the inheritances of twins, of consanguineous marriages, of diseases of the nervous system, of alcoholism, of syphilis, of tuberculosis, of mental troubles, of diseases of the skin and of the eyes, ears and blood, cancers, tumors, arteriosclerosis, hypertension and of the endocrines. He has sections on the nephropathies, diabetes, gout, alkaptonuria, cystinuria and porphyruria. It is an excellent book for any Spanish speaking physician who would like to get up to date on what is being done in the field of pathologic inheritance.

American Pocket Medical Dictionary Containing the Pronunciation and Definition of All the Principal Terms Used in Medicine, Surgery, Dentistry, Veterinary Medicine, Nursing, and Kindred Sciences; with Over 60 Extensive Tables. Edited by W. A. Newman Dorland, A.M., M.D. Eighteenth edition. Fabrikoid. Price, $2; Thumb indexed $2.50. Pp. 1,061. Philadelphia & London: W. B. Saunders Company, 1946.

This pocket dictionary has been thoroughly revised. It includes a great many entries for new drugs as well as the addition of new words in the various divisions of medicine, surgery and nursing. The definitions have been cut to few words, and this has made possible the inclusion of a great many entries in small space. Eighty-six tables are included, which greatly enhance the value of this thoroughly satisfactory small medical dictionary.

El sindrome coledociano: Fisiopatología—diagnóstico—tratamiento. Por Andrés López García, jefe de hepatalogía de la 1ª Cátedra de clínica médica de la Fac. de medicina de Buenos Aires. Trabajo de la 1ª Cátedra de clínica médica. Paper. Pp. 327, with 37 illustations. Buenos Aires: Libreria Hachette S. A. Palacio del Libro, 1943.

Dr. Lopez Garcia has written an attractive book full of information on the physiology and pathology of the liver in cases of jaundice. There are long chapters on choluria and cholemia, on the functional tests for diseases of the liver and on the syndrome which results from trouble in the common duct. There is a large bibliography. This book is an excellent one for any one interested in the recent advances in the diagnosis of jaundice.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

CONTINUOUS INTRAVENOUS PENICILLIN FOR SYPHILIS

To the Editor:—**Has a twenty-four hour treatment of syphilis with continuous infusion of penicillin been reported?**

Alexander Singer, M.D., Brooklyn.

ANSWER.—No method of continuous infusion of penicillin and in fact no method of treatment of syphilis with this drug over a less than five day period which can be recommended as satisfactory has been described. The best and most generally tried methods of treatment of early syphilis employ sodium penicillin in individual divided doses of not less than 40,000 Oxford units each intramuscularly at two to three hour intervals, day and night, over a period of seven to eight days. Methods for the treatment of latent and late stages of syphilis have not been standardized.

Continuous intravenous or intramuscular injections of penicillin, using total dosage as high as 10,000,000 to 25,000,000 Oxford units in twenty-four hours, have been described (Herrell, W. E.: The Clinical Use of Penicillin, THE JOURNAL, March 4, 1944, p. 622. Bloomfield, A. L.; Rantz, L. A., and Kirby, W. M. M.: The Clinical Use of Penicillin, *ibid.*, March 4, 1944, p. 627. Harris, F. I.: Continuous Intramuscular Infusion of Penicillin, *ibid.*, Sept. 3, 1944, p. 232. Hirsh, H. L., and Dowling, H. F.: Observations on the Continuous Intramuscular Method of Administering Penicillin, *Am. J. M. Sc.* **210**:435 [Oct.] 1945). These methods have received no extensive trial in the treatment of syphilis.

A recent article by Schwemlein, Barton and others (THE JOURNAL, Feb. 9, 1946, p. 340) refers to the fact that these authors are investigating a method for the treatment of early syphilis which will be the subject of a later report in which sodium penicillin is being given by continuous intravenous drip. What little experience there has been in the treatment of syphilis by the intravenous route would indicate that this method is inferior to the intermittent intramuscular method.

Thus in the experimental animal, using rabbits, it was found that from two to three times the dosage of sodium penicillin intravenously was required to produce the same healing effect as the intramuscular method using divided doses over a seventy-two hour period (Ercoli, N., and Lafferty, Lillian C.: The Antispirochetal Activity of Penicillin in Experimental Infection, *Proc. Soc. Exper. Biol. & Med.* **57**:4 [Oct.] 1944). The penicillin panel of the Office of Scientific Research and Development of the National Research Council also found in its preliminary work with syphilis in man that relapse appeared to be five to six times more frequent after intravenous than after intramuscular administration of comparable doses (600,000 to 1,200,000 Oxford units) of sodium penicillin in early syphilis (Moore, J. E.; Mahoney, J. F.; Schwartz, Walter; Sternberg, Thomas, and Wood, W. B.: The Treatment of Early Syphilis with Penicillin: A Preliminary Report of 1,418 Cases, THE JOURNAL, Sept. 9, 1944, p. 67). Much more experimental study is accordingly required before any short continuous method of administering penicillin could be recommended for the treatment of syphilis. The preliminary data indicate that such methods are probably unsatisfactory.

EFFECTS OF MERCURY IN SOFT TISSUES

To the Editor:—**A dentist was accidentally struck on the back of the hand with an ordinary mercury thermometer. The thermometer punctured the skin. Two days later there was cellulitis on the dorsum of the hand which responded satisfactorily to penicillin and hot packs. X-ray examination shows an accumulation of globules of mercury in the soft tissues of the dorsum of the hand. There is also apparently a traumatic ganglion at the site of the puncture. What are the effects of globular metallic mercury in soft tissues? The mercury is diffusely spread, and simple excision would not remove the entire amount. The use of suction has been considered in the hope of removing part of the mercury.**

R. P. Hallin, M.D., Worthington, Minn.

ANSWER.—If the hand is healed it probably would be wise to leave it entirely alone. Mercury is an innocuous substance and should not cause harm, even though it remains permanently in the tissues as many minute foreign bodies.

OPIUM ADDICTION, WITHDRAWAL AND INFECTIONS

To the Editor:—**It seems probable that derivatives of opium inhibit body functions to some degree in confirmed users. It has been the clinical experience at a hospital specializing in the treatment of drug addiction that chronic infections may lie dormant without the usual symptomatology or development. However, when the drug is withdrawn and the phenomenon of craving removed, such infections become apparent by the development of abscesses, lesions of the skin and mucosa and many other septic pathologic conditions, with a gradual rise in temperature.**

John D. Miller, M.D., New York.

ANSWER.—The question refers to a period in the treatment of a narcotic drug addict when "the phenomenon of craving" is terminated. This is understood to mean the period when the addict has convalesced from the abstinence syndrome.

The abstinence syndrome is a real condition; its intensity and duration and the results of various methods of treatment have been determined. It has been described in publications by Kolb and Himmelsbach. The most recent description is by Reichard.

Use of opium or of some of its derivatives inhibits some body functions. The most striking example is the decrease in libido in both sexes and in women the cessation of menstruation. These phenomena disappear after withdrawal from narcotic drugs has been completed.

Increase in bacterial infections is not associated with recovery from the abstinence syndrome. Preexisting conditions, e. g. bronchiectasis, asthma, duodenal ulcer and carcinoma of the lung, the symptoms of which are not troublesome while the addict is using narcotics, manifest themselves when he is abstaining from them.

Malaria and Monilia have been reported to be associated with addiction to opiates. In 1933 Faget reported a number of cases of malaria among narcotic drug addicts in New Orleans and suggested that the parasites were probably transmitted by the well known practice by addicts of using the same injection apparatus (syringe or needle and medicine dropper) without sterilization. Himmelsbach reported several cases of malaria acquired in this way. Helpern reported an outbreak of cerebral malaria among narcotic drug addicts in New York City with eighteen deaths. Data are not available as to a possible relationship between withdrawal from narcotics and the development of cerebral complications except in 1 case. This, a nonfatal attack, developed a few hours after admission to the hospital, before withdrawal symptoms had appeared.

Monilia infection has been reported as occurring in narcotic drug addicts. Wikler and his associates reported 2 cases and refer to 5 others in the literature, all in narcotic addicts. In 1 of the cases symptoms of monilia infection appeared several months after the withdrawal period. In the other the situation was more confusing. The patient was seriously ill when admitted, never showed any signs of withdrawal and received codeine sulfate 1 grain (0.06 Gm.) four times daily for relief of pain. He died twelve days after admission. His statements as to his addiction status prior to admission were considered undependable.

The abstinence syndrome, even when handled carefully, presents a biologic strain on the addict who has no complicating disease. When complications, e. g. cardiovascular disease or vitamin deficiencies, exist, severe exaggeration of the symptoms of the complications may occur. Deaths from these, not from the withdrawal from narcotic drugs, may occur. In the absence of complicating diseases the postconvalescent period does not present any particular risk. In fact, during this period the addict generally feels exceptionally well, even euphoric, and it is difficult for voluntary patients to remain in the hospital. They feel so well that they are sure they will never again feel the need for an opiate. Unfortunately, this belief is often incorrect and ill founded.

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DIPHTHERIA IMMUNIZATION OF SCHOOL CHILDREN

To the Editor:—The following refers only to children being immunized in groups such as at schools, clinics and orphanages rather than to those given individual consideration by a physician in his office or elsewhere. Since diphtheria is on the increase all over the country, it has been suggested that, instead of doing Schick tests on children entering school who received diphtheria toxoid in the first or second year of life, one should give a so-called booster dose of alum precipitated toxoid. A booster dose would not be given to those receiving alum precipitated toxoid within the past three years. On children above the age of 12 a Schick test would be done to determine their immunity status and if the result is positive three injections of plain toxoid would be given. It is asserted that such a plan would insure a greater number of children continuing longer with a higher antibody titer than if a Schick test should be depended on in children just entering school who had been immunized more than three years before. A statement of opinion of this suggestion will be appreciated.

James W. Chapman, M.D., Villa Park, Ill.

ANSWER.—Many health officers recommend the plan for diphtheria immunization described. To summarize, a reliable procedure would be to (1) immunize against diphtheria at 9 months of age, (2) give a stimulating (booster) dose of alum precipitated toxoid when the child enters school without resorting to a Schick test and (3) at 12 years of age or when the pupil enters high school perform a Schick test. If the test is positive, three injections of plain toxoid may be given as suggested, or alum precipitated toxoid in doses of 0.1, 0.2 and 0.5 cc. at intervals of two months may be given subcutaneously. The small dosage of alum precipitated toxoid mentioned is frequently sufficient for establishing immunity in adults who were previously immunized at an early age.

EFFECTS OF HYDROCHLORIC ACID FUMES

To the Editor:—Workers in a well ventilated factory manufacturing automobile radiators are exposed to hydrochloric acid fumes. Occasionally a worker may inhale any amount sufficient to cause choking and coughing. It has been difficult to enforce an order to wear masks, although petrolatum applied at points of contact of the mask will prevent the skin irritation caused by acid fumes seeping under the mask fittings. What are the effects of hydrochloric acid fumes on the bronchial mucosa? After six months to two years or more would there be x-ray evidence of increased hilar markings? J. A. Knapp, M.D., London, Ohio.

ANSWER.—Theoretically, hydrochloric acid fumes in excess of 10 parts per million are not desirable. When the quantity exceeds 35 parts per million, coughing and irritation of the upper respiratory tract may occur immediately. The amount of hydrochloric acid in measured volumes of air can be estimated by titration or by determination of the p_H of distilled water (of known p_H value) through which atmospheric air is passed. From a practical standpoint hydrochloric acid fumes cause little difficulty in industry. High concentrations are so irrespirable that workers immediately leave the danger zone. Effects are limited chiefly to the membranes of the upper respiratory tract, although bronchitis may occur. X-ray findings of the chest are not changed in any characteristic way. Prolonged inflammation due to bacteria or chemical irritants may extend the hilar markings but not beyond normal limits. It is believed that sustained exposure leads to some degree of tolerance. It is possible that this apparent adjustment is the result of the constant presence of mucus due to stimulation by the irritant gas. True tolerance probably does not exist. Like other mineral acids, hydrochloric acid may damage the teeth with erosion but without much gingival injury. Hydrochloric is the least active of all mineral acids. A 40 per cent solution applied to the skin for brief periods, such as thirty seconds, may cause only hyperemia.

TREATMENT OF BRITTLE CRACKED FINGER NAILS

To the Editor:—What will strengthen finger nails? White iodine has been tried as a local application and sulfur internally with various forms of calcium, all apparently to no avail. The nails are thin and crack through down to the tissue bed. M.D., New Jersey.

ANSWER.—It should first be determined whether the poor structure of the nails is part of a larger ectodermal defect in which other ectodermal structures, such as teeth, hair and sweat glands, may be stunted, deformed or lacking. Otherwise the approach most apt to lead to successful management is the nutritional. The liberal use of vitamins A and C as well as the B complex has been said on different occasions to overcome the brittleness of nails. Klander has laid emphasis on sulfur in the economy of nails. The use of foods rich in sulfur, containing the sulfur amino acids, such as methionine and cystine, would be more apt to do good rather than inorganic sulfur. A lack of iron can change the structure of the nails and alter their appearance. Determination of the hemoglobin value and administration of ferrous sulfate may be enlightening and of value. The endocrine glands are said to influence nail growth. The thyroid seems to be the most important in this category. The use of its dried product may improve the nails, but this should be done only after due consideration of the general condition of the patient. Occupations or pursuits that lend themselves to drying of or brittleness of the nails should be investigated. For example, the frequent use of nail polish removers, or exposure to industrial solvents may contribute to this.

TECHNIC OF INJECTION OF ILIOINGUINAL NERVE

To the Editor:—Please describe the technic of injecting the ilioinguinal nerve near the spine. What are the probable complications and contraindications? M.D., Michigan.

ANSWER.—There is no standard technic for injecting the ilioinguinal nerve near the spine. The most common site for injection is at the exit of the inguinal canal. The ilioinguinal nerve is formed by fibers of the first lumbar nerve and may occasionally contain fibers from the twelfth thoracic and second lumbar nerves. The same roots form another nerve, the iliohypogastric nerve. Therefore injection of the roots of the ilioinguinal nerve will at the same time affect the iliohypogastric nerve.

The paravertebral injection of the first lumbar nerve or the sensory ganglion in the intervertebral foramen is not accurate and is not recommended, as many large vessels are present in that area. Special care must be taken not to enter the dural sac, which may bulge into the intervertebral foramen. With the patient in a sitting position, a 10 cm. long cannula is introduced 3 cm. from the midline at the level of the first lumbar spinous process at a right angle to a depth of 3 to 5 cm. until the transverse process is felt. The needle is then directed medially below the inferior border of the transverse process at an angle of 20 degrees from the vertical and pushed 0.5 cm. deeper toward the intervertebral foramen. Aspiration should be performed before injecting 5 cc. of 0.5 per cent procaine in order to make sure that the needle is not in the dural sac or a blood vessel. Injection of alcohol is contraindicated.

TRANSMISSION OF UNDULANT FEVER

To the Editor:—Is it possible to transfer undulant fever from an active case with temperature of 102 F. to another person by using the same spoon, glass or thermometer or by the excretions, in a like manner to typhoid? Seth M. Wells, M.D., San Antonio, Texas.

ANSWER.—A few instances are known of acquisition of brucellosis by sickroom attendants. Rare, incompletely authenticated examples of conjugal transmission are also known. Since most suspected cases of these modes of transmission occurred in circumstances which did not permit rigid exclusion of all other sources of infection, little is known about the true frequency of occurrence. Even though the risk of man to man transmission, in manner similar to that of typhoid, is apparently slight, it is advisable to take similar measures to prevent it.

EXPOSURE TO CYANIDE FUMES

To the Editor:—In a loud speaker factory milk is given to the workers to counteract the effects of the plating and the spraying with acids (cyanide). Of what value is milk in these cases? Is there a substitute for milk which can be used as an antidote against possible pathologic effects of plating and cyanide? Aaron N. Gorelik, M.D., Bronx, N. Y.

ANSWER.—Milk does not give any specific protection against cyanides or other plating materials. The conditions of exposure mentioned are likely to provide intake of cyanide through inhalation and skin absorption rather than ingestion. The best prevention is proper ventilation to maintain atmospheric conditions below the danger level from cyanide gases or fumes. Wearing of suitable gloves and aprons may help to prevent passage through the skin. Certain protective creams have been suggested as a barrier to cyanide dermatitis and skin absorption but their value has not been fully established.

ATHLETICS FOR BOY WITH DIABETES

To the Editor:—A boy aged 15 years, height 67 inches (170 cm.) and weight 136 pounds (62 Kg.) has diabetes mellitus which is adequately controlled with 80 units of protamine zinc insulin before breakfast. Should he be allowed to play high school football? M.D., Georgia.

ANSWER.—The boy could play football provided (1) that the coach knows that he has diabetes, (2) that some one on the team is made acquainted with the fact, (3) that his diabetes generally is under reasonable control and (4) that he takes 10 to 20 Gm. of carbohydrate during the period of play.